Assimilating Identities: Social Networks and the Diffusion of Sections

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Oceania Monograph 57

Painting on front cover by
Katjara Buttler, Ngaatjatjarra dialect.
Arrows added by author

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Foreword

This study is an historical and structural investigation of the diffusion of taxonomic elements of the section system as known among dialectal groups of the Australian Western Desert. What a section system is and where the Western Desert is located will be developed in some detail in the following chapters. Let me explain why and how the present study came about.

The initial aim was to develop a methodology for investigating the variation, internal coherence and pattern of diffusion of kinship terminologies in the Western Desert. These terminologies are characteristic for both their homogeneity and their regional variational pattern, and they appear to be ideal-types for large-scale geographical comparisons, as well as for reconstructions of "proto-systems" or "proto-terminologies". Social categories, in this case sections, naturally presented themselves as the initial test-corpus for such a study. Lexical variations, as well as the overall complexity of relations expressed through the semantic positions of these variations, are far less a feature of section systems than they are of kinship nomenclatures. Studying local and regional terminological alternatives of the four basic categories in the system is a far less complex enterprise than undertaking the same for 20 or more kinship classes, not to mention their variations, which are not solely of a lexical but also of a structural and semantic nature.

The complexities of variational kinship terminologies are well illustrated in the example of *watjirra*, a word that throughout the Western Desert cultural bloc has some meaning associated with "cross-cousin", that is, a real or classificatory mother's brother's child or father's sister's child. However, while this term may be used by some dialectal groups, others may only understand it; it may refer to a close cross-cousin among some groups and to a distant and potentially marriageable cross-cousin among others; and it may be applicable to both females and males among some groups, but only to males among others (Dousset 2002a). It is evident that the analysis of the variations—and of their underlying principles—among 40 or more dialects, each with 20 kin classes or more, would be a complex enterprise. Although closely linked to the structure of the kinship system, sections distinguish only one gender, reflect only a limited number of semantic variations, can be analysed, in principle at least, without taking into account their pragmatic application, and are of limited number with only four basic categories in each arrangement. The feasibility of a linguistic, historical and anthropological study of the origins and diffusion of the section system in the Western Desert is greatly enhanced by this apparent simplicity.

The results of this preliminary study, investigating pan-regional relationships of taxonomic usages in relation to the section system, revealed it to be far more interesting than expected. One reason is that some results of the reconstruction of the section system terminology's routes of diffusion in the Western Desert corresponded surprisingly well with linguists' independent conclusions on similar questions, in particular those of Patrick McConvell. The second reason derives from the first. Indeed, if the general conclusions are consistent with those gained

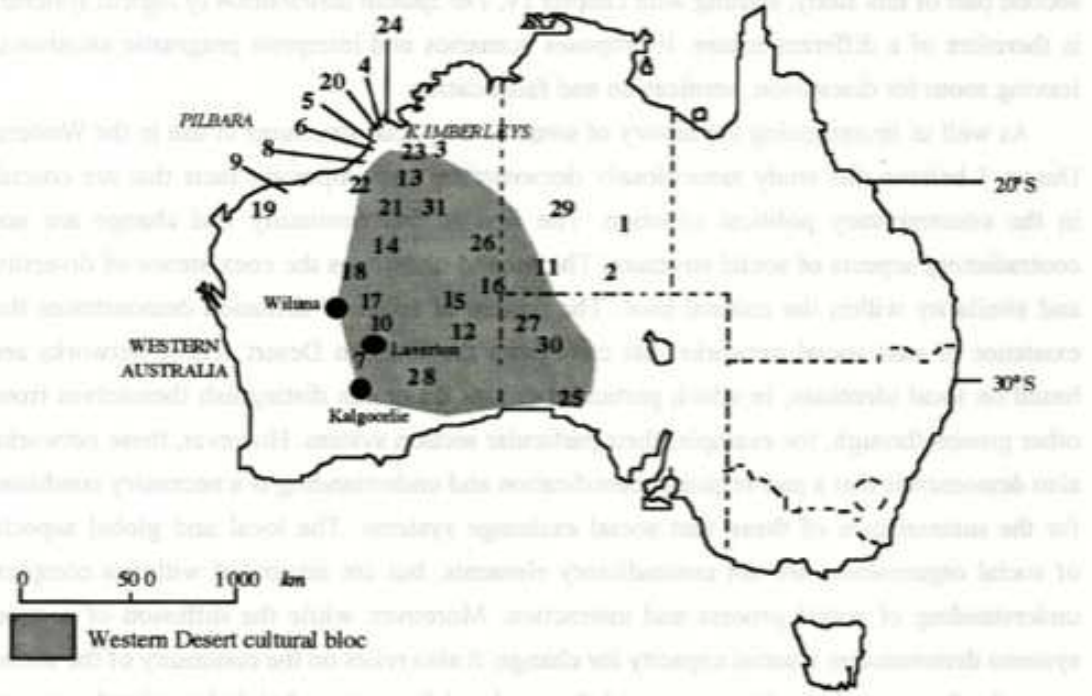
through other and distinct methodologies, this not only confirms the results, but also assigns some validity to the method developed here and encourages further investigation.

This methodology is largely non-interpretative, and in this sense differs from current anthropological approaches influenced by cultural studies and their interpretative and symbolic styles. It begins with a simple statistical test investigating the relationship between coordinates in space and structural variations of the section terminology. The results are descriptions of numerical correlations, not accounts or interpretations of Indigenous discourses as such. Once these necessary and rather formal first tests are overcome, analysis proceeds into less certain and more hypothetical and discursive terrains. If there are logical correlates within section system diffusion, they must be tied to actual ethnographic material through particular case studies, and to the social and historical background in which diffusion is embedded. The second part of this study, starting with chapter IV, *The spatial distribution of logical systems*, is therefore of a different nature. It proposes scenarios and interprets pragmatic situations, leaving room for discussion, verification and falsification.

As well as investigating the history of some of the social structures in use in the Western Desert, I believe this study meticulously demonstrates two important facts that are crucial in the contemporary political situation. The first is that continuity and change are not contradictory aspects of social structure. The second underlines the coexistence of diversity and similarity within the cultural bloc. The pattern of sections' diffusion demonstrates the existence of vast social networks that criss-cross the Western Desert. These networks are based on local identities, in which particular groups do or can distinguish themselves from other groups through, for example, their particular section system. However, these networks also demonstrate that a pan-regional identification and understanding is a necessary condition for the maintenance of these vast social exchange systems. The local and global aspects of social organisation are not contradictory elements, but are integrated within a complex understanding of social process and interaction. Moreover, while the diffusion of section systems demonstrates a social capacity for change, it also relies on the continuity of the social networks that carry them. Continuity and change, local diversity and global similitude, are not contradictory aspects of social reality and process, but mutually structuring and interdependent principles.

While the original hypothesis and preliminary investigations were formulated and undertaken some years ago, it is only since 2000 that the project has approached completion. This has been made possible by my position as a postdoctoral research fellow at The University of Western Australia, and, since the beginning of 2002, by an ARC postdoctoral fellowship. Financial assistance is indispensable, and I am more than grateful to all those who have directly or indirectly supported my applications. Input and criticisms from, or conversations with, scholars are a condition for persevering with projects about whose purpose one needs every now and then to be convinced. Bob Tonkinson, Patrick McConvell and Maurice Godelier were among the first to read early drafts. Their help and comments, and sometimes strong criticisms, are immensely appreciated. Not always did I follow their advice, however—which is probably responsible for any gaps and misconceptions in this study. Years ago, Will Christensen kindly

sent extracts of his thesis to me in France, where I was living, and where his work, like that of many other scholars, is not easily available. More recently, David Brooks sent extracts of manuscripts that greatly helped my understanding of the local conditions at Warburton. Lee Sackett provided data and explanations for those areas in which he did extensive work. He also provided helpful suggestions after reading the manuscript. Others, such as Katie Glaskin, John Henderson, Sandy Toussaint, and many more, have corresponded and discussed with me particular questions relevant to this book. Nicholas Evans and Barbara Glowczewski commented very constructively on a nearly final version. All have my deepest gratitude. Gill Hutcherson did a remarkable job in reading and thinking about every single sentence. If this book has become understandable, then it is largely thanks to her inestimable efforts.



Map 1: Approximate extension of the Western Desert cultural bloc

Key to Map 1

Spellings of dialectal groups or tribes, as well as of the terminology of social categories, have usually been maintained as written in the reference quoted. The names as they are usually spelled are between brackets.

1 **Alyawarra (Alyawarre)** (Yallop 1969)

2 **Aranda (Arrernte)** (Spencer & Gillen1927; Elkin1931:71)

3 **Bunaba (Bunuba)** (McConvell 1985a)

4 **Djaberdjabera (Jabirr Jabirr)** (Elkin 1933)

5 **Djugun (Jukun)** (Bates 1985:207; Elkin 1933)

6 **Jawuru (Yawuru)** (Elkin 1933)

7 **Kalamaia (Kalamaya)** (Bates 1925)

8 **Karadjari (Karajarri)** (McConvell 1985a; McKelson 1980:215)

9 **Kariera (Kariyarra)** (Brandenstein 1982:12; Radcliffe-Brown 1913)

10 **Koara (Kuwarra)** (Bates 1925:105)

11 **Luritja** (Fry 1934)

12 **Mandjindja (Manjiljarra)** (Elkin 1931:68; Elkin 1940:298, 317)

13 **Mangala (Mangaria)** (McKelson 1980:217)

14 **Mardu** (Jigalong) (Tonkinson 1991)

15 **Ngaanyatjarra** (Douglas 1977a)

16 **Ngaatjatjarra** (Dousset 1999a, 1999b)

17 **Ngaiawongga** (Bates 1985:203)

18 **Ngarlawonga (Yinhawangka)** (Bates 1985:102)

19 **Ngarluma** (Brandenstein 1970; McConvell 1985a)

20 **Ngombal (Ngumbarl)** (Elkin 1933)

21 **Njangamarda Iparuka (Nyangumarta)** (O'Grady & Mooney 1973)

22 **Njangamarda Kundal (Nyangumarta)** (McKelson 1980:217; O'Grady & Mooney 1973; McConvell 1985a)

23 **Njikena (Nyikina)** (Bates 1985:90)

24 **Njul Njul (Nyulnyul)** (Bates 1985:90; McConvell 1985a)

25 **Ooldea** (location) (Berndt & Berndt 1992:48; 1942-45)

26 **Pintupi** (Fry 1934; Myers 1986)

27 **Pitjantjatjara** (Goddard 1985)

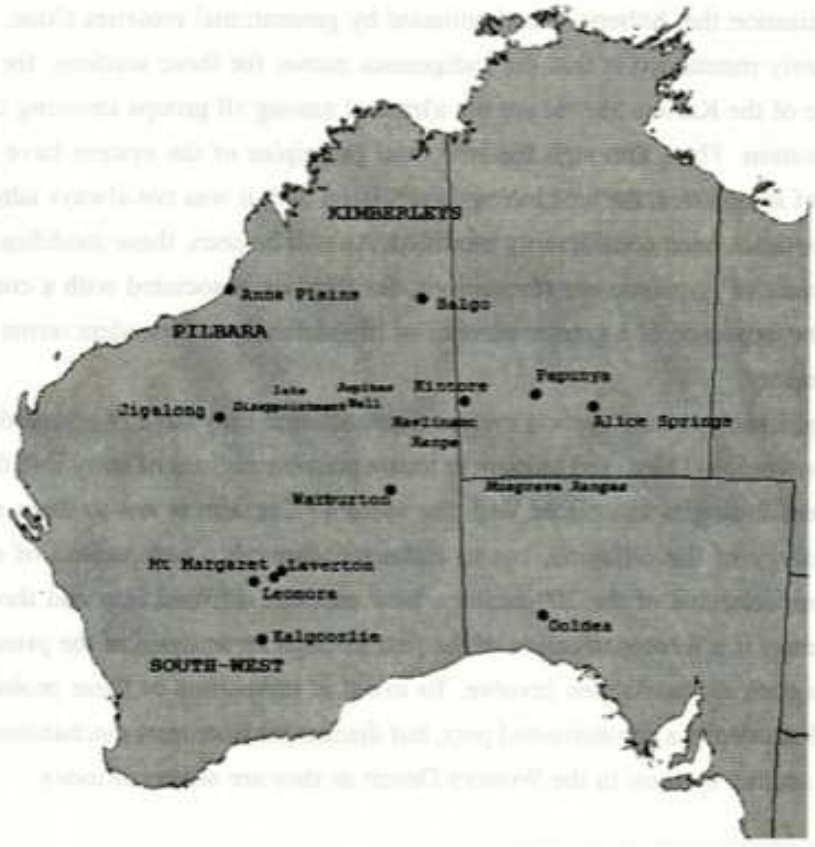
28 **Waljen (Walyan)** (Elkin 1931:68; Elkin 1940:317)

29 **Warlpiri** (Meggitt 1986: chap. 10)

30 **Yankunytjatjara** (Goddard 1985)

31 **Yulbaridya (Yulparitja)** (McKelson 1980:217)

Map 2: Principal locations mentioned



I. Introduction

The social organisation of Australian Aboriginal society, in the past as well as in the present, is often associated with the existence of social category systems, such as moieties, sections and subsections. These are a limited number of groups or named classes into which society is divided and among which relations are organised by rules of marriage and filiation. The Kariera, or Kariyarra, people on the Australian west coast, to name one of the most cited examples, possess four named sections (Panaka, Purungu, Karimarra and Palyarri), whose relations are such that a person of the Panaka section marries a person of the Purungu section, and a person of the Karimarra section marries a person of the Palyarri section. The children of a Panaka woman are Karimarra and vice versa, and the children of a Purungu woman are Palyarri and vice versa. These social categories, ascribed by birth, function both as an overlay compatible with kin categories and as personal labelling devices.

What is less often realised is the fact that, in the Western Desert cultural bloc at least, but presumably in many other regions as well, the diffusion of these socially structuring devices is relatively recent. The widespread existence of section and subsection systems in Australia today is not a heritage from time immemorial, but, quite the opposite, testifies to the dynamics of change among Australian cultures. In the Western Desert (see Map 1), the spread of the system as we know it today was completed in the 1930s and 1940s, superimposing itself on to a social organisation that hitherto was dominated by generational moieties alone. Another characteristic rarely mentioned is that the Indigenous names for these sections, for which I have given those of the Kariera above, are not identical among all groups knowing this form of social organisation. Thus, although the structural principles of the system have diffused over thousands of kilometres, the terminology associated with it was not always adopted "as is", and has sometimes been considerably modified. As will be seen, these modifications are not solely the result of linguistic transformations, for they are associated with a complexity resulting from the existence of a greater number of linguistically independent terms than are structurally necessary.

In this study, I analyse how section system nomenclature may have progressed through the Western Desert cultural bloc, and attempt to locate possible regions of entry into the desert of the diverse terminologies associated with the system.[1] The aim is not to draw a precise temporal chronology of the diffusion, but to elaborate, through a comparison of observed systems and nomenclatures of the 20th century, how sections diffused into and through the desert. In this sense, it is a reconstruction of the past through an analysis of the present, with all the problems such extrapolations involve. To avoid at least some of these problems, the conclusions will not depict a reconstructed past, but discuss the historical mechanisms behind the diffusion of section systems in the Western Desert as they are observed today.

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[1] Section systems are not limited to the Western Desert but are known in many parts of Australia, such as vast areas of Queensland (see Berndt & Berndt 1992 [1964]:46ff for a discussion and a map), as well as in other parts of the world, such as Amazonia, Vanuatu or China. In this study, however, I only deal with the Western Desert and some surrounding systems.

The routes of diffusion and substitution of systemic terms throughout the Western Desert pinpoint two important social and historical elements. Firstly, they underline the importance and accuracy of construing the many dialectal groups that inhabit the area within a single cultural bloc, as Berndt (1959) proposed many years ago. Secondly, the geographic pattern of the diffusion, and the impressive speed with which such an abstract system of social classification was adopted, demonstrate the intensity and breadth of social networks linking dialectal groups throughout the area, as well as the dynamics inherent in a society that, according to popular vision, and unfortunately by some academics as well,[2] is believed to have been, and to be, static, a relic from ancient and pre-historic times. Both matters will be explored in later parts of this study.

Researchers such as McConvell (e.g. 1985a) and Brandenstein (1982) have provided crucial answers to the questions of origins and diffusion: one point of emergence of one of the Australian four-section systems is located in the Pilbara region, along the west coast of the continent. Earlier hypotheses with similar content were formulated by Bates (1925), who suggested that the section names of the Aranda in Central Australia probably originated in the northern part of the Kimberleys. Elkin (1939:199) later commented that the study of sections and subsections in the Northern Territory and in Western Australia reveals that they have diffused into those regions from the north-west, that is, from the De Grey-Broome region in the Pilbara-Kimberley. Some years earlier, Elkin was somewhat less "precise" concerning the geographic origin of sections, but seemed to indicate that diffusion of sections to the south-east, that is, into the Western Desert, was to him a contemporary event:

> From the Punaba, the boundary of the sub-section system passes south-east into Central Australia to about the MacDonald Ranges. The tribes on the south-west of this line have no marriage divisions of any sort, moieties, sections or sub-sections, but they are gradually being influenced by the four section system which is spreading south-east from the regions nearer the coast between the Fitzroy and the Gascoyne Rivers (Elkin 1932:324).

It is only relatively recently that linguists' work, especially that of McConvell, has demonstrated the partial accuracy of these early hypotheses. Brandenstein's and McConvell's ideas will be developed further in the following pages. For the time being, we will acknowledge that their approach is principally a linguistic one, articulating the linguistic-historical transformations of each section name within a limited set of terms in space and time. While such an approach is revealing for settling questions related to the origin and diffusion of one specific term from its proto-form to its various contemporaneous appearances, it may in some cases be inconclusive when the diffusion of a complete and organised taxonomic

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[2] See, for example, Kolig (1989), who seems to negate any internal dynamics in Aboriginal culture. For example, on page 55 he writes: "Traditionally, Aborigines had neither fear nor anticipation for the future: supreme indifference is probably an adequate description of their attitude. This was so because there was no notion or theory of social change, neither as inevitable nor even possible"; and on page 58, "change was not so much dogmatically forbidden as its existence denied".

and socio-structural system cannot be reduced to the diffusion of its individual components. Indeed, the existence of a greater number of terms used in the Western Desert than is formally necessary adds a supplementary difficulty to attempts to understand the principles of dispersion. It is thus necessary to add to the analyses of linguistic transformations one focused on the rules of combination and mutual substitution of the terminology. The section system and its components not only diffused by undergoing transformations of cognate terms but were also modified by the emergence of lexicological items that were not existent in the system's "original" form. While McConvell has, as we shall see, enriched his analyses of the diffusionist pattern of subsections and sections in the northern areas of Western Australia and the Northern Territory with such "combinatory" questions, this has remained to be undertaken for the Western Desert cultural bloc. Such a study has to question the "logic" inherent in the diffusion and substitution of section names in an area where, from a global point of view, available terms exceed in number the necessary terms. This is what I have endeavoured to do here.

The questions asked and the explanatory concepts proposed will be discussed in detail throughout this work. It is nevertheless useful to frame its aim within a simple interrogation and to introduce one of its key notions: are there "valeurs of sections" progressing in space and reflecting the history of previous combinations of sections within the system? A "valeur of a section" would be more than a section, as it merges various terms that, during their diffusion, came to substitute for one another while retaining a common structural-semantic value. This structural-semantic value is defined only in relation to other terms (or "valeurs") within a local system, as well as in relation to other systems within a regional social network. Where the notion of "valeur of a section" can be demonstrated to have an ethnographic substance, one will be likely to propose hypotheses concerning specific regional networks that can with reasonable accuracy be characterised both as having pre-dated Western colonisation and as being particularly intense. Hence, in addition to its phenotypical value as a *section*, the *valeur of a section* also includes its own history.

In this introductory chapter, I shall, as a first step, illustrate the theoretical and ethnographic context in which the diffusion and substitution of the terminology took place. The formal and pragmatic aspects of the section system are presented. Next, I will provide a brief overview of the history of anthropological approaches to, and interpretation of, this system. A further step will describe the Western Desert cultural bloc, that is, the geographical as well as cultural area that is the focus of this study. Thereafter, I will explain theoretical considerations concerning the idea of diffusion and its application, and the methodology applied in this work.

Following the Introduction, I deal with the spatial distribution of individual terms (Chapter II), of pairs of terms (Chapter III) and of the logical system (Chapter IV). Each presents the analytical results obtained as a consequence of increasing complexity, which is understood as the result of the combination of an increasing number of factors, either terms or structural relations, being taken into account. As complexity increases, the power of global or general statements and definitions decreases, but the accuracy of the description of local or regional relationships increases. The last of these three chapters will therefore illustrate

specific and localised case studies of encounters between what at first glance appear to be divergent systems. The following chapters (V and VI), however, return to the macro-approach and propose a general pattern of the various diffusional routes that have brought the section system through the Western Desert. Because the section system was predated by yet another social category system, namely, alternate generational moieties, an additional chapter (VII) illustrates the geographic distribution of this system. Surprisingly, in some respects, the distribution of moiety terms is much more homogeneous than the distribution observed for the section system. One could expect the section system to be rather homogeneous throughout the desert because its origins are geographically limited and its diffusion fast—provided, of course, we accept the hypothesis that diversification is somehow correlated with age. We shall see, however, that quite the opposite is the case: it is the terminology of the generational moieties that is rather uniform, a fact that probably points to the cultural and social significance of moieties in structuring interaction and ceremonial performance among neighbouring families and groups, and therefore is one of the social vehicles for inter-regional networks.

I.a The four-section system

Recorded as early as 1841 by Sir George Grey (1964 [1841]) during an 1837-39 expedition in Western Australia, the four-section system is one of the better-known types of social category systems of Australia. Other types are the eight-subsection system, the semi-moiety system and the moiety system. They all have in common the division of society into an even number of groups or classes, which have Indigenous names. They are explicitly recognised as such by Aboriginal people and are not mere anthropological constructs. What alters between these types is the number of groups into which they divide society, and the structural relations that link the groups within the system. In a four-section system, as the name indicates, society is divided into four groups.

Because of their inherent binary characteristics, some systems can be deduced from another in a logical way. An eight-subsection system results where a four-section system is elaborated by distinguishing first and second cross-cousins. A section system is the combination of two moiety systems, one matrilineal and the other patrilineal. Radcliffe-Brown (1930:39) stressed that these moieties were inherent in the section system even if they were not recognised by Indigenous peoples as such: "It is important to remember that the moieties exist in every section system whether they are named or not". In the Western Desert, where the section system is widespread, moieties are, however, not systematically recognised. The Pintupi and Mardu do know patrimoieties, but none of the Western Desert groups uses matrimoieties.

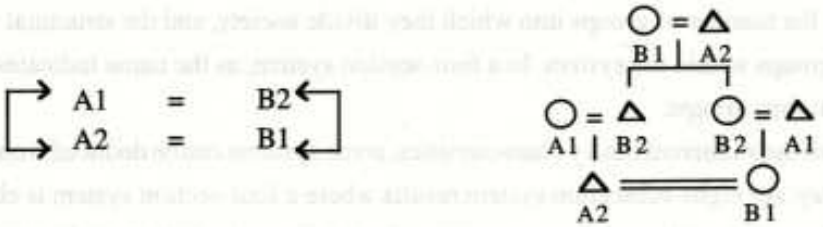
One of the most economic definitions of section systems I have encountered was proposed by Hammel (1960:15). Section systems, the author suggests, respond to three basic assumptions: first, section organisation results from the permutation of lineal kinship affiliations; second, all groups of affiliates are exogamous; and, third, the entire model is endogamous.

I use here a structural representation of the four-section system including moieties and depicting an actual cross-cousin marriage (Figure 1). This is for convenience only, and

is not intended to be an ethnographic account, as moieties are rare in the Western Desert and as marriage with first cross-cousins is not allowed (with the interesting exception of the Mandjildjara-speaking people [Tonkinson 1991:64]). While the form adopted here for representing the section system does not fully account for the ethnography, it has, however, the advantage of facilitating the understanding of the relationships within the system, which can then be easily extrapolated to actual situations.

Following this diagram, there are two matrilineal moieties, A and B, and two patrilineal moieties, 1 and 2. All possible combinations of these moieties give rise to four sections, e.g. A1, A2, B1 and B2. The relations between sections are expressed through rules of marriage and filiation in such a way that one always has to marry a person of the opposite patrimoiety, as well as of the opposite matrimoiety. If Ego is the combination B1, then he/she must choose a partner from "A", and from "2", that is, "A2". The section system itself is cyclic and follows, if we consider direct genealogical lines, a matrilineal (or indirectly matrifilial) principle, so that Ego's mother's mother is always of the same section as Ego, and the former's partner, that is, Ego's mother's father, always of the same section as Ego's partner. Of course, it is also patrilineal (or indirectly patrifilial) as Ego's father's father is always of the same section as Ego, too.

Sections that are in a spouse relationship are also in a cross-cousin relationship. A potential wife for male Ego is of the same section as the children of his father's sister and his mother's brother, that is, the section that combines Ego's opposite matri- and patrimoieties. Figure 1 represents these basic relations.



A constitutes one matrimoiety, B the other
1 constitutes one patrimoiety, 2 the other

Figure 1: Formal representation of the four section system (left) and its equivalent in theoretical genealogical terms (right)

A woman of section A1 marries a man of section B2 who is related to her as "spouse" and cross-cousin, and their children are A2. If the woman is B2 and the man A1, then the children are B1. Thus, equations (or sections in the same row) link intermarrying sections, and arrows (or sections in the same column) connect a mother to her child. From the formal nomenclature mentioned above, one can see that children always combine one "character" of each of their parents: A2 inherits "A" from his/her mother and "2" from his/her father.

While sections and the section system are illustrated in the commonly accepted graphic layout displayed above, abbreviations and structural relations differ somewhat among authors. Some remarks are needed here to avoid confusion. Most common is Radcliffe-Brown's (1913:148; 1930-1:38) layout. However, I do not use his abbreviations, for I believe they do not make for easy understanding of the internal coherence and formal divisions of the section system. I prefer a model based on Dumont (1966), who was himself inspired by Lawrence (1969 [1937]; see also Galton 1889) to introduce a formal distinction between patri- and matrimoieties. Dumont proposed replacing Lawrence's usage of the letters X,Y and A,B, which stood for each pair of the two moiety systems, with letters and numbers (A and B became 1 and 2; X and Y became A and B). Dumont's layout, however, stressed the relationship between men, or in fact patrifiliation, while the relationship between women (mother-child relationship) is usually stressed by other authors. I therefore use Dumont's model, but invert the structure so that the mother-child relationship lies in the vertical line, and the father-child relationship in the diagonal line. Such are the principles used in Figure 1 above and in all subsequent figures. As explained elsewhere (Dousset 1996), I believe this model to be more accurate because it includes the structural—but not inevitably ethnographic—presence of moieties, and, more importantly, because it distinguishes a characteristic that seems rather widespread in Aboriginal Australia, which is that a person inherits different substances or rights and duties from his or her father and from his or her mother. The principles of inheritance undergo cultural variations inside a more global Aboriginal scheme, but the distinction nevertheless seems to be a constant theme in the anthropological literature. For example, a person's blood and flesh are substances that are reported to be inherited from the mother (see Elkin 1932, 1934, 1967 and 1970), while, at least among anthropologists, there was, and sometimes still is, a general (probably erroneous) understanding that the most significant mechanisms for affiliation to land are usually inherited in the patrifilial line.

Cresswell (1975: 158) also uses the layout I use. Unfortunately, he seems to understand sections as corporate land-holding groups, a confusion that has reigned in the literature for some time. It is important to understand that sections are not corporate groups of any kind. They may well, indirectly at least, have some significance in the organisation and performance of ceremonial activities, as two sections combined constitute one of the generational moieties that are relevant in ritual. In some areas, sections are also used as personal labels or names, such as among the Mardu at Jigalong (Tonkinson 1991:73). Persons with identical sections, however, cannot be interpreted as constituting an enduring group with a discriminatory—in the sense of being able to exclude others—relationship to land.

Another precaution is necessary. Despite the illustration of sections (and subsections) in a model that represents marriage and filiation, it is important to recall that, as Radcliffe-Brown (1930:37), Scheffler (1978) and others have stressed, the section system is not the basis of marriage rules[3] (or of descent, one should add, as they only standardise indirect filiation). Sections are a ceremonial, sometimes totemic, and labelling device that is overall compatible

[3] Elkin (1967[1954]:90) also observed that marriages are arranged in accordance with actual kin categories and relationships, and not with respect to sections or subsections, although in earlier writings, especially in his discussion

with kin-classification. A section that is in a spouse relationship to Ego, however, may also include persons who are not socially tolerated marriage partners, such as, in the Western Desert, actual mother's brother's daughter, father's sister's daughter, daughter's daughter and father's mother. As Radcliffe-Brown (1913:193) explained, the "fact that a tribe has two or four named divisions tells us nothing whatever about the marriage law of the tribe, which can only be ascertained by a careful study of the system of relationship".

Elkin described subsections (and by extrapolation also sections) in a way that points to what I believe is one of the system's primary functions or *raisons d'être*:

> The function of the sub-section division is to summarize and classify relations, social duties and avoidances into eight kinds. Thus, as soon as a person's sub-section is known, all present know at once what his social attitude and behaviour should be towards them and what theirs should be towards him ... It is clear that the system does provide a medium for social thought, and seems almost to dominate it (Elkin 1932:320-321).

Because sections and subsections are ascribed mechanically at birth, and are generally not modified later in life, Fry (1933:267) confirms Elkin's point by writing that a "[class name] serves as a ready-reference index by virtue of the fact that it is a constant for each individual". Indeed, kin categories are associated with particular behavioural etiquettes: avoidance of mothers-in-law, joking relationships with cousins, respect towards fathers, and so on (see Tonkinson 1991:63). Particular kin categories are summarised within sections or subsections. In some respects, they are guides in such matters as determining the appropriate behaviour to be adopted towards another person.

Table 1 summarises the four sections and the general kin categories that are found in each of them. Ego is here determined as A2, but could, of course, be a member of any other section. The figure represents general kin categories, not only actual kin. For the sake of brevity, generations +2 and -2, that is the grand-parents' and grand-children's generations are omitted. Following the principles described in Figure 1 above, the reader should easily be able to determine these if necessary.

A1 mother, mother's siblings female Ego's children	**B2** father, father's siblings Male Ego's children
A2 (Ego) Ego's siblings, father's brother's children mother's sister's children	**B1** mother's brother's children father's sister's children

Table 1: Sections and kin categories

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of the Aluridja (or Western Desert) system (1938-40), he was more hesitant, if not ambiguous, in this respect.

What may appear the most surprising feature in the distribution of kin categories within the section system is that opposite-sex siblings do not have children of the same section. This, indeed, is where "bifurcation" takes place, that is, where, for succeeding generations, the distinction between mother's children and mother's brother's children (and between father's children and father's sister's children) is instituted, where the distinction between parallel- and cross-cousins is established.

While each individual kin category is linked to a particular range of behavioural patterns, the general classes that are created in the section system help to summarise grossly similar types of such patterns into global categories. If Ego is A2, he will have, generally speaking, to adopt behaviour ranging from respect and obedience to avoidance towards A1 and B2, while he may have more relaxed and reciprocal relationships with people belonging to A2 and B1.

Sections or subsections, as general guides in determining behavioural attitudes, have certainly become central in contemporaneous settings with improved means of communication and transportation. Ceremonial activities have expanded to include cooperation with groups and families from distant areas, which may have different languages and sometimes kinship systems (see Peterson 2000), and therefore reflect situations in which knowledge of one another's section or subsection is a means of determining appropriate mutual behaviour. Such usage of the section system was probably not absent in pre-colonial times, but has certainly undergone important intensification since.

The section system—and social category systems in general—however, have not always been depicted in the above manner. Throughout anthropological history until the 1970s at least, scholars working with Australian Aboriginal tribes and groups devoted a large part of their account to the description of Indigenous social organisation, and most often presented this as central to every aspect of Indigenous life. A great many theorists, amazed by the "the precision and clarity" of Australian "marriage classes", as Lévi-Strauss (1967:461) puts it, made Australian social organisation the cornerstone of kinship studies. Since Fison, Howitt and Morgan, section, subsection and moiety systems—all of which were termed "marriage classes" and considered survivals of a previous custom of group marriage—have been seen as the brand mark of Australian Aboriginal social organisation in particular and, erroneously, as an idiosyncrasy of Aboriginal culture in general.

Howitt (1996 [1904]:41ff) expressed his view of Australian Aboriginal society as being composed of two basic types of classification. The first is geographic or territorial and distinguishes named local groups. The second is social and, based on moieties, sections, sub-sections and totems, expresses rules of marriage. When descent or filiation are matrilineal, he further claimed, these two types of classification cross-cut each other in such a way that members of a local group are not all simultaneously members of one and the same social category. When, on the other hand, descent (or filiation) is patrilineal, there may be cases in which all members of a local group are also members of the same social category. Howitt called those social formations in which social classes and local group coincided "clans", and those local corporations that did not align with the social category system "hordes". Australian Aboriginal social evolution, according to Howitt, reflected a movement or transformation

from an organisation of "hordes" to one of "clans", so that social exogamy (prescribing marriage outside a social group) became congruent with local exogamy (finding a partner from another territorial unit). From this too brief overview of Howitt's important work,[4] we see that, very early on in the anthropological history of Australia, social organisation or social categories were linked by authors to corporations that, in one way or another, involved territorial elements.[5]

For decades, at least since Howitt's writings, social categories and territorial organisation became the most debated features of Australian Aboriginal culture. Lévi-Strauss (1967:231, 249, 251), to quote probably the most famous example, described the Aluridja system of the Australian Western Desert as *aberrant* because, among other reasons, it did not demonstrate the existence of, or compliance with, section systems. Moreover, the presence of what he considered endogamous moieties—more correctly known as merged alternate generational level divisions (or moieties)—were for him irreconcilable with what he considered to be the peculiar aspect of Australian social organisation.

Various theoretical frameworks were constructed upon Australian social organisation. Some of these will be briefly presented below, especially with respect to what I consider the two basic, albeit rather divergent, approaches adopted towards social organisation in former times. The first approach is concerned with the structural integrity of alliance and descent systems. While alliance and descent theories were sharply distinguished among scholars, such a division sheds little additional light on the understanding of section systems.[6] Both approaches are structural-formal, for they largely extract the system from its context and study it as a socially independent abstraction. The second general approach, on the other hand, is concerned with the context in which social organisation is embedded. Scholars employing this approach were interested in the ecological, political and sometimes psychological conditions accompanying social category systems, and probably found its origin in Kroeber's writings (especially 1938), but it also reflects Malinowski's functionalist conception of social organisation and its constituents.

The structural-formal approach

Radcliffe-Brown, as the most representative scholar for descent theory in Australia, underlined the necessity of distinguishing social category systems from actual marriage patterns and rules. Lévi-Strauss and Dumont, however, who were central actors in the replacement of descent with alliance theory from the 1950s onwards, promulgated an understanding of section and subsection systems as reflecting and regulating the exchange of women between descent groups, and henceforth combined earlier findings of the descent theory approach with approaches oriented towards exchange patterns.

Radcliffe-Brown, based on the sociological schools of Durkheim (1897) and, later,

[4] See Keen (2000) for a discussion of Howitt's work.

[5] See also Lawrence (1969 [1937]), who consistently amalgamates "hordes" and "classes" (sections).

[6] Dumont (1997 [1971]) wrote an excellent account of the similarities and differences between alliance and descent theories.

Murdock (1949), saw social categories as the formal product of the intersection of lines of filiation, justifying a representation of the system as a combination of patri- and matrimoieties, as mentioned earlier. Among descent theorists, social categories were seen as a means of prohibiting incest, but also, and probably more importantly, as a device constituting indirect lines of descent or filiation and defining a person's place within the territorial organisation. As such, Radcliffe-Brown's ideas can be traced back as far as Curr (1886-7, vol 1:111; emphasis in original), who believed that "these laws divide the tribe into classes, with the object of *preventing marriages of persons near of kin*", an opinion that was also shared by Mathew (1899). In this respect, Curr opposed Fison's conception of sections as being the remnants of an ancient practice of group or communal marriage between a group of men and a group of women (Fison & Howitt 1991 [1880]), an idea that Morgan (1991 [1880], see especially page 10) misinterpreted and thought to be contemporaneous among Aboriginal groups observed by Fison.

Alliance theorists, on the other hand, while taking for granted the corporative aspects of sections and subsections, believed these categories to be the ruling device of alliance, and therefore the means of organising the distribution and circulation of women among corporate groups. Society is characterised by the exchange of women, goods and words, and sections or subsections were the perfect vehicle illustrating such systematic exchanges. They were understood as the normative framework for Dumont's "marriage alliance" (*alliance de mariage*), that is, the repetition of identical and reciprocal marriage patterns between determined groups by way of continuously exchanging sisters or daughters over generations. The alliance theory interpretation of section systems in Australia has not disappeared from the scene, as Viveiros de Castro's (1998) work testifies. This author defends Dumont's opposition between Australian systems, which are called "global" because of the presence of sections and subsections, and the "local", or Dravidian, system found elsewhere. The section or subsection system is not seen solely as a stratum overlying kin category structure, as it would be seen by most Australianists today, but as an inherent classifying device articulating alliance rules.

The contextual approach

The second approach is grounded in both alliance and descent theory. However, it adds a supplementary dimension by integrating in its analyses pragmatic explanations for the existence and geographic distribution of social category systems. They were seen as part of a global system, including ecological, demographic and historical aspects, and the approach distinguished itself from the structural-formal approach through emphasising the dynamic and dialectical aspects of social structure (e.g. Godelier 1977).

Yengoyan is probably the most prominent, as well as the most controversial, advocate of such an approach for Australia, although Elkin (1967:47) and Service (1960) elaborated on such views earlier. Indeed, like Elkin, Service claimed that sociocentric classifications, such as sections, are likely to exist in the more arid regions, rather than along the coast, and that these social classifications are a tool regulating inter-tribal exchanges and contacts between scattered groups in areas with low demographic densities. He believed, with Elkin, that they

are general guides to kin-classification, and tools in the maintenance of relationships and in the elaboration of social ties over large distances, and therefore exist in areas where the carrying capacity is low, that is, in the central and more arid regions of the continent. Service, however, distanced himself from alliance theory. He emphasised that, while social categories were institutional in maintaining social ties, they did not regulate alliance as such:

> They ... exist, rather, because of a rule of marriage which creates two intermarrying groups in the society; that is, marriage and moiety are two aspects of the same thing. Individual marriages are arranged much more specifically with particular relatives and are not affected by the presence or the absence of named moieties (Service 1960:424-525).

Yengoyan's ideas elaborate on Service in conceiving the section system as a social institution of "closeness" among geographically distant people and as engendering a corporateness that would, without sections, be non-existent or not remembered in areas where families and groups live at great distances from one another, such as in the arid regions. In some ways, he believes sections replace genealogical memory in upholding social links between groups, and create a sentiment of closeness or solidarity where other types of social ties are missing. This corporative aspect of section systems is, according to Yengoyan (1968a, 1968b, 1970, 1972), an existential necessity in an ecologically disadvantaged area such as the Western Desert, guaranteeing mutual rights of access to resources, as well as maintaining enduring networks of exchange. While Yengoyan accurately recognised the necessity for such mechanisms and networks in the Western Desert, he was mistaken in attributing these to the section system.[7] Indeed, sections do not constitute corporate groups, do not regulate alliance, and are absent or known only since very recently in those areas in which Yengoyan observed and depicted their social importance.

The approaches adopted by Service, and to some degree by Strehlow, do not conflate sections with the idea of corporate groups; nevertheless, they underline to some extent their pragmatic advantage in ecologically unprivileged regions. This is of particular importance for this study, because we must ask what motivated the section system's diffusion throughout large parts of the Western Desert: why was it adopted so rapidly and easily by groups living at great distances from one another and hitherto using exclusively a social category system based on alternate generational moieties?

Following Kroeber (1938), Service (1960:422) suggests that these social category systems have no important determinants "within a group's internal order", but have uses in the group's external relations:

> More plausible ... would be an analysis which included as the basic components of the class system those aspects of the kinship system which are most significant

[7] See especially McKnight (1981) and a short critique in Layton (1986).

> for general social conduct or etiquette, particularly when individuals cannot establish their specific kin relationship (Service 1960:423).

Strehlow (1999) also writes, in a manuscript of the early 1950s, that Aranda subsections are merely "convenient inter-tribal labels for kin-groupings". They therefore constitute a *lingua franca* of kinship, a guide in interactions that exceed linguistic and cultural particularities and allow for appropriate behaviour, be it ceremonial or mundane, between individuals who do not meet regularly, or have never encountered each other before.

Lawrence (1969 [1937]) has already pointed to the "inter-tribal" function of social categories, but he also underlined a factor that is relevant to the approach developed in this study: among neighbouring groups, and even among the various groups of a cultural area such as the Western Desert, there is an Indigenous knowledge and understanding of the various systems, an understanding that articulates their variety and their terminological and structural arrangements. With the following words, he implicitly introduces the idea of a "valeur of a section", the notion that is of central importance here:

> Over distances which, in view of the backwardness of the material culture, constitute a marvel in anthropology, tribes stand in relations of *commercium et connubium*. In association with these far-flung intertribal contacts—certainly in part instrumental as well as consequential—there has developed a recognition of the equivalence of classes the length of the continent. By this is meant that, though the number of classes increase, though the names of classes be unlike, though like names be arranged in unlike affiliations, the native nevertheless recognizes the corresponding divisions in different tribes (Lawrence, 1969 [1937]:321-2; emphasis in original).

Following Service (1960), and in accordance with some of Lawrence's and Strehlow's statements, I will refer below to this characteristic as the external social function of social category systems. It does, indeed, strongly reflect what I have experienced among Ngaatjatjarra-speaking people in the eastern part of the Western Desert, where knowledge and relevance of section names are more important in contexts that involve people with whom there is no daily interaction than within local communities, where one hardly hears section names pronounced at all. Among Ngaatjatjarra-speaking persons, section names, or "skinnames", as they are called in English, are referred to as *yini* (a general word for "name", "personal name"), or *miri* (lit. "skin colour"). More accurately, however, one's section is also termed *yara*, a word that could be translated as "metaphor" or "symbol".[8] In contrast to Warlpiri people of Central Australia, for example, Ngaatjatjarra-speaking people do not give dogs section names, and despite the use of *yini* (i.e. personal name) as a translation for sections, they are seldom applied to people within the community. Sections have a very minor importance in everyday social interaction.

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[8] Glass & Hackett (2003) translate *yara* as (1) way, custom and (2) scenario, series of events.

If sections are institutions that are of importance for their external social functions, then it can be expected that they would lend themselves well to diffusion from one group to another. If sections are a *lingua franca* for kinship, then they must have spread among neighbouring parties and must be known and understood by groups and families that, every now and then at least, interact in one way or another. Their character as a "ready-reference index" (Fry 1933:267) is the engine for its own diffusional capacity in present as well as in former times. This is a point noted very early by Lang (1916:167), who explains that "when names were given to the anonymous classes[9] in any locality they would be likely to spread, owing to the convenience in identifying the classes of strangers". Elkin summarises this point when discussing kinship systems in the Pilbara and the Kimberleys:

> The meeting of tribes for ceremonial purposes, and nowadays, too, the mixing of members of different tribes in white employ, facilitates and encourages the spread of such systems of summarizing kinship. They are naturally of very great value at intertribal gatherings, enabling camping, social activities and marriages to be readily arranged, whereas the labour of comparing and adjusting the actual relationships through kinship terms alone in different languages would be a very difficult process indeed (Elkin 1932:325).

I.b Section systems and history

The observation of the geographical distribution of section and subsection systems and nomenclatures throughout the continent and the hypothesis that such systems have diffused over large areas are not recent. Service's writings, again, are a particularly revealing example, especially when he argues that the descent theory type of explanation of social category systems is inaccurate:

> Some Australian tribes have no named classes, others two, four or eight. They all have patrilineal descent and are remarkably similar in most other aspects of social organization. Why do they not all use class nomenclatures? Why do the southern Arunta have four named classes and the northern eight, when they are otherwise identical? How can the diffusion of the system be explained, if its presence is caused by some strong local social function or need? (Service 1960:422)

Service makes it clear that, if sections were a device responding principally to local social needs, then they would not have to diffuse over such vast areas. While the causal relationship he describes between a strong cultural feature's *local* function and its diffusional capacity is not necessarily demonstrated, one would have to agree with Service that a strong *external* function would be conducive to adoption by neighbouring groups. Indeed, possible internal

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[9] Lang (1916:165) defines these anonymous classes as "the divisions which are in fact made in a tribe by the operation of the terms of relationship"; one would call these kin categories today.

or local functions are not in competition with the system's external usages; and the system's elegance in summarising kin categories across ethnic or cultural-linguistic boundaries is evident. It must, however, be assumed that, if its pragmatic application is to provide advantages in inter-group communication, then, indeed, the kinship behavioural pattern among the groups adopting the section system must be similar overall. For example, the avoidance of mothers-in-law, albeit to varying degrees, has to be a general feature of neighbouring kinship systems if the sections are to operate as a general grid for classifying and determining behaviour towards unknown persons. Such similarities need not reflect pragmatic applications of particular kin terminologies or marriage rules, but must at least be congruent with the general pattern of a Dravidian-type of bifurcate-merging and kin-classification, which the great majority, if not all, of Australian kinship systems indeed have.

In this general sense, section and subsection systems are devices that lend themselves particularly well to what McConvell (1996:128) understands as *cultural diffusion*:

> By cultural diffusion I mean the passing of an element of culture—a material artefact, a technology, a form of social organisation, a concept—from one ethnic group to another one with which the first group is in contact. Associated with this process very frequently is the passing on of a verbal element of culture that goes with the material/conceptual element.

The process of *cultural diffusion*, which operated on section systems and nomenclatures in the Western Desert, is to be distinguished sharply from *language expansion*, a mechanism in which one group adopts the language (or culture) of another group either entirely or by way of merging with the pre-existing language (or culture). Movements and migration of people always accompany this *language expansion*. Diffusion of the section system does not, however, need people to actually migrate, nor does a culture or language have to change significantly when adopting the system. Cultural diffusion of sections results in an overlying addition to the general kinship pattern, but does not necessarily involve significant changes of the kinship system, if any at all. As Turner (1976:188) asserts, section and subsection systems can be adopted by groups even if the systems are, at first sight at least, incompatible with their own kinship category system, and without modifying its structure.[10]

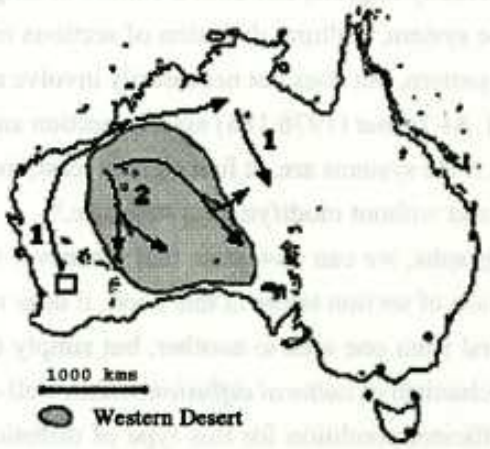
Following the above paragraphs, we can now state that whenever there is discussion of diffusion, substitution or equation of section terms in this book, it does not imply that people, families or whole groups moved from one area to another, but simply that terms progressed through space based on the mechanism of *cultural diffusion* within well-established exchange systems. The essential and sufficient condition for this type of diffusion is that groups are, in one way or another, in more or less regular contact, usually through exchange of goods,

[10] One must add, however, that Turner was following here Elkin's (1938-40) erroneous interpretation of the Aluridja or Western Desert system. Elkin described the Aluridja system as not distinguishing siblings from cross-cousins, and hence as being incompatible with bifurcate-merging and other general Dravidian characteristics; and hence incompatible with the section system. See Dousset (2002a and 2003) for an analysis of these misinterpretations and a depiction of the Aluridja system as being Dravidian.

ceremonial activities or inter-marriage. While migrations within the Western Desert were frequent, such as when westerly groups moved to Ooldea in South Australia in the 1940s, these are not necessary conditions for the diffusion of sections.

The present study focuses on rather recent diffusional patterns of the section system in the Western Desert, those that I estimate to have occurred since approximately the mid 19th century. Let us turn first, however, to the geographical pattern of the diffusion of social category systems prior to the timeframe considered here.

While section systems are used in many Australian regions (e.g. Berndt & Berndt 1992:46ff), the following discussion will describe only the systems of the western part of Australia. In his 1996 paper, McConvell depicts a chronology that combines features of both cultural diffusion and language expansion.[11] After an initial proto-Pama-Nyungan break-up in the Carpentaria region some 5-6000 years ago, proto-Nyungic moved southwards to Central Australia and westwards in the direction of the Kimberleys, where further splits occurred around 2-3000 years ago. What is of importance here is the origin of what McConvell calls the *western section system* in the Kartu area of the South-West some 1-2000 years ago, which spread northwards into the Pilbara area, on through the Kimberleys, and then eastwards into the Northern Territory. From 1000 B.P., this *western section system* met another system McConvell calls the *northern section system*, originating south of Darwin. The western section system is believed to have spread southwards to Central Australia into the Arandic region, while it also combined with the northern section system into a subsection system that spread southwards as well, following the path of the initial western section system diffusion. At the same time, the Western Desert language, which began spreading into the area about 2000 years ago, completed its expansion about 1000 BP, with intensified contacts between Western Desert and Arandic languages (see Map 3).



Map 3: Simplified map of the diffusion of the western section system and of the Western Desert language expansion, 2000 to 1000 years B.P.

1) Origin of the western section system in the South-West, its diffusion northwards to the Pilbara and Kimberley regions, then eastwards into the Northern Territory, and southwards into Arandic regions.

2) Western Desert (Wati) language expansion throughout the Western Desert.

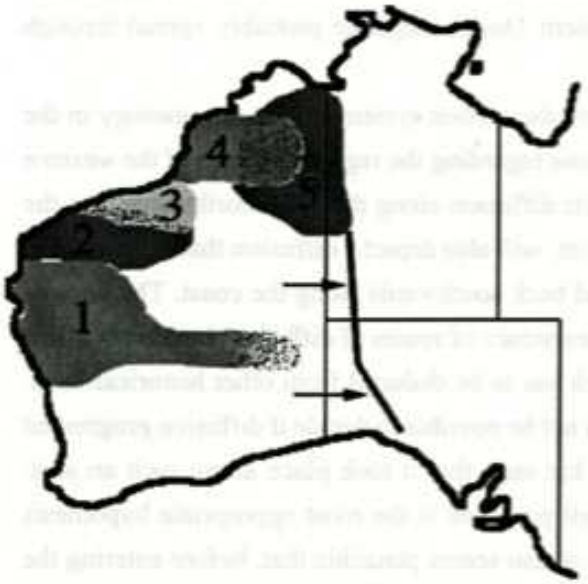
[11] See also McConvell 1985a, 1985b, 1990 and 1997.

What should be remembered from this general chronology is that section and subsection systems progressed in space through the mechanism of cultural diffusion, not necessarily through migration of people, while the Western Desert language probably spread through migration.

We shall see that the routes of diffusion of the section system and its terminology in the Western Desert confirm McConvell's hypothesis regarding the region of origin of the *western section system* in the South-West, as well as its diffusion along the coast northwards into the Pilbara-Kimberley regions. This study, however, will also depict a diffusion that originated in the Pilbara-Kimberley region and then moved back southwards along the coast. The lines of regression elaborated below demonstrate the existence of routes of diffusion, but do not allow us to determine their cardinal direction, which has to be deduced from other historical facts. Along a north-south route, for example, it will not be possible to decide if diffusion progressed from north to south or from south to north, but only that it took place along such an axis. While the south to north direction McConvell proposes is the most appropriate hypothesis for the initial diffusion of the section system, it also seems plausible that, before entering the Western Desert, the system moved back southwards in later stages with a slightly modified terminology.

The section system penetrated the desert from two general regions, one the South-West and the other the Pilbara-Kimberley area with its system of modified terminology. Interestingly, these two partly distinct terminologies encounter each other in the Western Desert again, engendering new combinations. It is the reason for, and nature of, these combinations that give the methodology developed here its substance, for it is only because the section systems we encounter today are the result of such recombinations of two original and distinct sets of terms that they reveal their transformations in the past and the routes of diffusion they must have employed.

It is difficult to determine an exact timeframe, or even an approximate starting date, for the diffusion of the section system into the Western Desert. One of the earliest accounts producing a general picture of the social category systems of tribes and groups in Western Australia is Mathews' (1903-4) paper published in the Queensland Geographical Journal. Mathews' distributional pattern of these systems is a summary of his correspondence with station managers, the Police Force and, as he states, "others who might be recommended by any of these" (1903-4:45). The author explains that he is confident of his informants' reliable character. While some of his statements have to be taken with much caution, and while for some regions it seems improbable that he could have received detailed ethnographic material and therefore was probably extrapolating from existing data, his description nevertheless allows us to draw a picture of the likely geographical distribution at the beginning of the 20th century (see Map 4).



→ Approximate eastwards extension of the section system today (some areas are overlapping with the eight-subsection system)

1) Murchison, Greenough, Sanford, Roderick, Wooramel, Gascoyne and Lyons Rivers, Lake Throssal, extending eastwards into South Australia.

2) Ashburton, Fortescue, Oakover and Throssel Rivers.

3) Roebourne District, Yule, Maitland, Shaw and de Grey Rivers.

4) Lower Fitzroy and Lennard Rivers to Broome

5) Subsections: Ord, Denham, Lower Fitzroy and Margaret Rivers, Sturt Creek.

Map 4: Distribution of section systems in Western Australia at the beginning of the 20th century, according to Mathews (1903-4).

Regions 1 to 4 represent four-section systems, region 5 an eight-subsection system. Some of the variations between the regions are solely terminological, others are structural. Both will be analysed in more detail below, but it is sufficient here simply to quote the terms Mathews associates with each region:

Region 1:	Bûldyerri	=	Burung
	Kaimarra	=	Bugarlu
Region 2:	Bulcharri	=	Burronga
	Kurrimurri	=	Banaka
Region 3:	Paldyarri	=	Kaiamara
	Burungo	=	Banaka
Region 4:	Parradyerri	=	Kaiamba
	Parungo	=	Panaka

Table 2: Terminologies of Mathews' section systems[12]

[12] Unless otherwise stated, the structural disposition as presented in Figure 1 is used throughout this work to represent sections.

There are some obvious problems emerging from Mathews' geographical distribution. First, it is not possible to determine if the eastwards extension of Region 1 is an extrapolation from his data, or if he was drawing on ethnographic material. The latter is rather improbable, because most of the areas in the central Western Australia-South Australia border regions have only been visited extensively since 1903-04. Conversely and for the same reasons, one might suggest that it is not because Mathews did not mention section systems for some of the central areas that they were effectively unknown to local groups. While the answers to these problems are not to be found in Mathews' paper, they can be deduced from other data. The Ngaatjatjarra, a dialectal group in the eastern region that is depicted by Mathews as being without sections or subsections, did not indeed receive this system of social categories until the 1920s or 1930s. Let me illustrate this case in some detail.

Recent adoption of the section system: a case study

Ngaatjatjarra- and Ngaanyatjarra-speaking people of the central and eastern part of the Western Desert, extending from the Warburton Ranges to the Rawlinson Ranges and north and south of the latter, have not always been accustomed to the section system, and Pitjantjatjara- and Yankunytjatjara-speaking people to the south-east, while acknowledging its existence, do not use it on a regular basis. Elderly Ngaatjatjarra persons remember that they hardly used sections at all when they were youngsters. However, they knew of the system from their neighbours to the west, the Mandjildjara-speaking people, many of whom are living today in Jigalong and Wiluna. Since the late 1930s, they had also known about the subsection system of the Pintupi people in the north and north-east, who predominantly live today in Papunya, Kiwirrkurra and Kintore.

It is difficult to put a definite date on the arrival of the section system around the Rawlinson Ranges. However, some elements allow hypothesising that it came into use, albeit with some structural misarrangements, in the 1920s or 1930s. Indeed, Tindale (1988:254) wrote that Pitjantjatjara people from Mt. Davies, south of the Rawlinson Ranges, had been familiar with the section system since 1933. Further south, for Ooldea, the Berndts (1992:47) write that the section system arrived there only in the 1940s and that it had not been well integrated there as "people did not really understand it".

There is convincing evidence for these testimonies. Firstly, elderly Ngaatjatjarra people remember from which cardinal direction the sections had arrived. Ngaatjatjarra people use six names for the four-section system.

Karimarra and Milangka = Purungu

Tjarurru = Panaka and Yiparrka

Milangka is an equivalent for Karimarra, and Yiparrka for Panaka. Karimarra, Milangka, Purungu, Tjarurru and Panaka are said to have arrived from the south-west, from the region

of Kuwarra- or Kuwarratjarra-speaking people.[13] The origin of Yiparrka was unknown to my interlocutors. They nevertheless positively asserted that it did not come from the same direction as the other section names. We shall see later that, indeed, Yiparrka must have arrived in this region of the Western Desert from the north-west, through the Yulparitja and those who are today called Pintupi people.[14]

The second piece of evidence for the sections' late arrival in this region is provided by Tindale's reports on the use and structure of the system in the Warburton Ranges and to the east around Mt. Davies and north of it. Tindale (1935a) reports an arrangement of sections in the Warburton Ranges that must be considered odd compared to the system in place today. He notes that a Milangka man's *maritji* (brother-in-law) is Panaka, while, according to the same informant, Milangka marry Purungu people.[15] Tindale also notes that this Milangka man's father's father is Purungu, while, according to the system in use today, his father's father should be Milangka (or Karimarra). Section systems reflect, as was seen earlier, the rule of indirect filiation according to which a man's father's father is of the same section as himself, and a woman's mother's mother of the same section as herself.

Later, in the same field book (1935a), Tindale presents the Ngaatjatjarra section system in such a way that matricycles and patricycles are inverted. Children of a Purungu woman are Tjarurru, while they should be Panaka; and children of a Purungu man are Panaka, while they should be Tjarurru.

In his field notes regarding the north-western corner of South Australia, just east of Mt. Davies, Tindale (1957) first reports a system that is identical to the one used today. Later on, however, he adds two additional possibilities regarding the children of a Karimarra man, according to which they are either Tjarurru or Panaka. For the Blackstone Ranges, south of the Rawlinson Ranges, he notes the following relations:

Husband	Wife	Children	Comment in relation to current system
Taroro (Tjarurru)	Panaka	Karimara	(children should be Purungu)
Karimara	Purungu	Taroro	(children should be Panaka)

The confusion becomes even greater around Mt. Davies, some 100 kilometres east of the Blackstone Ranges, where Tindale notes the relations reproduced below. Interestingly, two types of marriages are allowed for a Tjarurru person: one with Panaka if Tjarurru is a male, one with Purungu if Tjarurru is a female.

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[13] This dialectal appellation is no longer used today. Ngaatjatjarra people say that Kuwarratjarra people were living around the Warburton Ranges and are now absorbed by Ngaanyatjarra-speaking people.

[14] As often happens, historical events are not always identical to their mythological explanations. There are, in fact, two complementary discourses regarding the arrival of sections, one that is "historical" and the product of events and encounters in the past, the other cosmogonic. Stories that explain the arrival of the section system depict them as coming from the east, and not from the west (see Appendix b: *Stories explaining the arrival of sections in the Rawlinson Ranges and Warburton Ranges*).

[15] Recall that a brother-in-law is in the same section as one's wife, and that this brother-in-law should therefore have been Purungu (or the wife Panaka).

Husband	Wife	Children	Comment in relation to current system
Tjarurru	Panaka	Karimara	children should be Purungu, as in Blackstone Ranges as in current system
Karimara	Purungu	Panaka	Purungu should have a Karimarra/Milangka wife
Purungu	Tjarurru	(n.d.)	
Milangka	Yiparrka	Tjarurru	Milangka should have a Purungu wife

By the time of Tindale's 1963 expedition to the Rawlinson Ranges, the above-mentioned arrangements and anomalies had disappeared, and Tindale (1963a) reports a system that is identical to the one used today.

Three explanations can be imagined for the above-mentioned confusions. The first, simply, would state that Tindale's recordings were mistaken, or that he did not understand the informant or his interpreter. The second explanation would hypothesise that the section system was, during Tindale's early visits, in transformation and that its structure was being rearranged. The third and most probable hypothesis suggests that informants were not yet accustomed to a system that had arrived only recently, and that sections were used exclusively in inter-dialectal gatherings.

The first two explanations can reasonably be excluded. Tindale was a meticulous field researcher and it is improbable that he would have noted uncertainties without accompanying descriptions. Eliminating the second explanation is more difficult. If the system were being adjusted to that of neighbouring groups, we would need to determine who these neighbours were, and what systems were operating there. The neighbours of Ngaatjatjarra people who had a section system were those from whom it is most likely to have diffused: Kuwarratjarra, that is, Ngaanyatjarra people today. Their system, however, was already recorded by Tindale as being stable, that is, identical to the system found today. Readjustment of the section system takes place if a group is surrounded by two or more neighbours possessing divergent systems or nomenclatures. This was obviously not the case in or south of the Rawlinson Ranges.

It seems, therefore, that the only comprehensive hypothesis is that the informants had not mastered the structure of the system because of its recent arrival, as the Berndts (1992:47) stressed in the case of Ooldea. Sackett (2001) arrives at the same conclusion regarding the Mandjindja people—although here it is the arrival of multiple systems that causes problems—in relation to whom he says that they were "grappling with problems presented by section variations in the area, and the implications spreading from them". This was also the impression of Tindale, who, in the introductory notes to his Frameworks (1965:98) for the "Nakako" people of the Mt. Davies area in 1963, writes: "no class system until 1933, not yet fixed and all persons at generational level one Tjintul are called Panaka". What is meant by this sentence is that sections were largely used as equivalents to alternate generational level divisions, and therefore as a social category system that did not distinguish cross- from parallel-relatives.

This hypothesis coincides well with Ngaatjatjarra people's recollection of the geographic origin of most section terms used, and also with the fact that, unlike Central Australian groups such as the Arrernte or Warlpiri, the section system is not today a dominant social element in everyday life. Therefore, while a certain cultural homogeneity is confirmed for the many dialectal groups of the Western Desert, there are nevertheless regional variations, in particular with regard to the section system and its diffusion.

I.c Homogeneity and heterogeneity in the Western Desert

Elkin spent most of 1930 studying Australian Aboriginal culture, especially kinship and social organisation, that is, social category systems, north and west of the Murray River in South Australia. One major outcome of this research was a series of papers entitled *Kinship in South Australia* (1938-40), which were published in Oceania. Among the various kinship systems he discusses in this important work, that of the fourth and last region retaining his attention covers the whole of South Australia west and south of the Aranda (Arrernte) regions, and extends into the south-west corner of the Northern Territory and westwards deep into Western Australia. Elkin writes that "throughout this extensive region there is a very marked similarity of culture", and he subsequently "referred to the tribes of this culture region as the Aluridja group" (1938-40:424).

Later, Berndt (1959) proposed calling this area the "Western Desert cultural bloc", which followed Elkin's attempt to describe it as a culturally homogeneous set of tribes or groups. Despite Elkin's depiction of the region's composition as a group of tribes, and regardless of Tindale's and Birdsell's oppositions,[16] Berndt described the social structure of the area as being significantly different from that of other Australian regions. Berndt understood the area as a set of societies and groups that could not be defined as independent tribes in the same manner as was usually done for other regions of the continent. He proposed that the Western Desert cultural bloc includes more or less distinct dialectal groups, rather than strict political or territorial endogamous units composed of exogamous subgroups or local groups. Dialectal groups are not land-holding units as such, nor can they be considered political entities. Moreover, because, as some argue, dialects or languages were "*put onto country*" in mythical times (Rumsey 1989; see also Hamilton 1982[17]), and because movements between such dialectal areas were frequent, an unambiguous relationship between people and country on the one hand, and dialect and country on the other, could not and cannot easily be established.

The Western Desert cultural bloc was and still is characterised by its pan-regional network of interrelations between families and regional groups of families. This network is reinforced by a vast number of shared cultural traits, including language, material culture, ritual life and, in particular, elements of the Aluridja-type of kinship system (see Dousset 1999a, 1999b, 1999c, 2002a and 2003).

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[16] See, for example, Birdsell (1976).

[17] As Hamilton explains, there is a relationship between dialect and country that is not tied to actual and identifiable individuals: certain areas represent a specific dialect, but people may move in and out of these areas. However, I have not found any Western Desert Dreaming that explains how language was actually put onto country.

Despite this cultural and linguistic homogeneity, there are variations in some elements of Western Desert social organisation and kinship. Indeed, although most groups possess sections, some use six terms (Ngaatjatjarra, Ngaanyatjarra) or eight subsections (Pintupi). There are also groups not using the section system at all (Pitjantjatjara,[18] Yankunytjatjara). Another example is the moiety system. While none of the Western Desert groups names matri-moieties, some have named patri-moieties (Mardu and Pintupi). The main social category classification used by all Western Desert groups is generational moieties (cf. White 1981). Here again, there are some, albeit more limited, variations. A later chapter will discuss these and illustrate their geographic distribution in the Western Desert.[19]

Throughout the Western Desert, marriage takes place between cross-cousins (and some persons of identical alternate generational moiety, but different generation),[20] yet here again some variations exist. Mandjildjara-speaking people, included today with Mardu people, allow marriage between some people related as actual cross-cousins (Tonkinson 1991:64), while the Ngaatjatjarra allow marriage only between cross-cousins who are genealogically and spatially distant (at least to the third degree) (Dousset 1999a).

Obviously, another feature varying among Western Desert groups is the section terminology. In the Western Desert, some 40 more or less distinct terms and, more importantly, the variation in their structural position inside the system, call into question a strict identity between lexical items of the section system across the Western Desert. To illustrate, two groups, named 1 and 2, possess sections, the names for which are, in Group 1, A, B, C and D. Group 2 may use terms which are linguistic cognates of some of the names used by Group 1, say A', B' and C'. Group 2, however, uses one term which is completely different from all terms used by Group 1, say E. In addition, the names used by Group 2 may have different structural positions in the system (Figure 2).

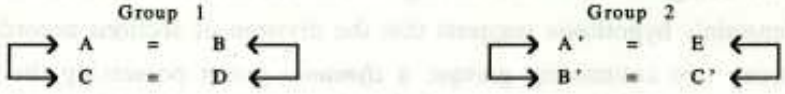


Figure 2: Formal example of differences in section names and their structural positions

A and A', B and B', and C and C' can be considered cognates, or have what McConvell (1985a:14) calls a *cognate equivalence*. Examples could be Purungu for A and Burunga[21]

[18] Lee Sackett (pers. comm.) reports that Western Pitjantjatjara, such as those living around Wingellina, use sections nowadays.

[19] There are also variations in the kinship terminology and in some cases even in the nature of kin classification inside the Western Desert cultural bloc, although all dialects seem to follow an identical basic system that clearly distinguishes itself from other systems such as those found in Central Australia. These variations are too complex to be discussed here, and will be the subject of a later work.

[20] This does not accord with Elkin's (1938-40) or Hamilton's (1979:301) depiction of the Aluridja system, both stating that marriage between classificatory siblings could or can take place. I have shown elsewhere (Dousset 2002a and 2003) that this must be a mistake.

[21] Note that these cognates could be identical in sound, in fact, but distinctively transcribed by various researchers and authors.

for A', D and E, however are completely distinct terms, say, Yiparrka for D and Burgulu for E. They could be structurally equivalent—or have what McConvell calls a *pragmatic equivalence*—that is, be linguistically distinct but represent identical relations. In this case, they would simply be synonyms. However, we see in the above example that a man, B', in Group 2 marries what would be his daughter, C, in Group 1. Indeed, in Group 2 a man, B', marries C', while, in Group 1, C would be B's daughter. What happens if persons of these two groups intermarry? Even if A and A', B and B', C and C' are linguistically close terms, the transformation of the structure of the system in its diffusion from Group 1 to Group 2 demands a global approach to the potential and observed combinations of section names. It is not possible to describe a direct historical "filiation" between the systems of those two groups without understanding the nature of the substitutions and permutations that occurred more generally in the area considered. What happened when, say, Group 2 adopted the system from Group 1, and how are the interrelations of the two systems thought of, so that the above-mentioned hypothetical case of a man marrying a woman who would be a daughter is not interpreted as such? The various sections and the interrelationships of these two systems have to be mentally mapped in such a way that confusions like this cannot lead to structural or behavioural aberrations. The principal hypothesis regarding such a mapping is condensed in the notion of *valeur of a category*. A *valeur of a category* of sections contains not only the rules of equivalences, cognate and pragmatic, but also the structural rearrangements these equivalences must have gone through during the section's diffusion.

I.d Theoretical considerations on the question of diffusion

It is useful to define the *valeur of a category* of sections more clearly, and, as a first step, to underline its distinction from what Brandenstein (1970, 1972) called the "substance of a section", the latter being understood as the signification of section names in their dualistic relation. Brandenstein's hypothesis suggests that the division of sections accords with the distinction between two contrasting groups: a *dynamic* group possessing the characters "active" and "passive" and a *blood* group with the characters "cold" and "warm". The four-section system of the Kariera would express such a "physiognomical typology", where each section is the combination of one element from each of the contrasted groups. Thus, the Pannaga section is "cold-blooded" and "active", Paltjarri is "warm-blooded" and "passive", and so on.

The section system is, still according to Brandenstein, also a natural and totemic classification. For example, reptiles are of the "cold blood" group and therefore associated with Pannaga and Purungu; fire, on the other hand, is classed as Karimarra, while dew is Purungu, and so on. Brandenstein goes even further in propounding a thesis according to which Aboriginal people would have applied biological laws of heredity, so that the "human temperaments" attributed to each section were passed through the generations according to the rules that organise the relations between the sections. Thus, a Purungu man would, in effect, be "passive" and of "cold blood", and, if married to a Pannaga woman, who would

have the "same blood" but be "active", would have children of Karimarra section who would have "warm blood" and temperaments that were "active".

The aim here is neither to confirm nor to refute the thesis formulated by Brandenstein—although I will allow myself a brief comment in the conclusion—but to eliminate possible confusions between the "substance of a section" (Brandenstein's humours or temperaments) and the "valeur of a section" as I use it.[22] The latter is *the underlying logic of the combination of a section with others accompanying it during its diffusion, that is, its structural position. This "logic" results from the internal coherence of the system, that is, the sequence of necessary events and causalities determined in concordance with those structural relations or positions*. The main assumption made here is that the four-section system diffused along with the associated terminology, but that this terminology may vary, as when a new term replaces one of the existing terms. Both terms, the new one and the replaced one, constitute part of the same valeur of a section.

The notion, and therefore the subject of this study, is far less "substantial" than were Brandenstein's preoccupations. It is not the essence of the terms that is of interest here, but their existence and coexistence, that is, their phenomenological and structural aspects. The logic and, hence, "truth" sought, and the necessary verifications it will have to undergo, are those formulated by Russel as being of "the fourth type":

> The correspondence theory of truth, according to which the truth of basic propositions depends upon their relation to some occurrence, and the truth of other propositions depends upon their syntactical relations to basic propositions (1997:289).

The valeur of a section, or of a category of sections, has, therefore, not much in common with a section itself, and is a theoretical construction that is not temporal and that does not imply one specific chronology of events, but is a hypothesis relating, for example, to how and where a section term was eliminated because it was considered to be in a structural position in the system identical to that of another section it encountered during its diffusion. Redundant terms are, in this sense, part of the same valeur. The Western Desert, or parts of it, is understood as a totality having one global and hypothetical section system in which, because there are different section names, general equivalence rules between section names have and had to be elaborated. To a certain degree at least, this general hypothesis is ethnographically justified, as Western Desert groups were not isolated, and their interaction was reinforced by the concentration of Aboriginal people in settlements from at least the 1930s onwards. The sum of all valeurs reproduces what could be called a diasystemic map, in which each valeur is the sum of its equivalence rules in relation to section names. The study of these valeurs, albeit analysed synchronically as a contemporary set of systems, allows for describing the diffusion

[22] There is another important distinction between the approach presented here and Brandenstein's work. Indeed, the latter progresses from a local or regional cultural phenomenon towards hypothesising a global pattern. My approach will proceed inversely. It will progress from a description of a general feature or pattern towards regional and local hypotheses.

routes of section names, for the valeurs are the result of previous combinations during the system's diffusion. This study is therefore not a linguistic reconstruction leading to the elaboration of historical maps, but an historical reconstruction drawn from the pattern of more or less synchronic structures: pragmatic equivalences are understood as the contemporary expression, the signature, of past events. The valeur of a category of sections is similar to McConvell's (1985a) definition of "pragmatic equivalence", but it adds a dynamic aspect to it in interpreting the process of substitution as a trace for suggesting cardinal directions.

McConvell, who read an early and much shorter draft of this monograph some time ago, made, among many other very helpful suggestions, one particular comment that I need to address here, as it touches on some essential aspects of my approach.

> Probably the fundamental problem that I have is whether this represents a truly diachronic approach to the question. Diffusion of sections is a diachronic problem par excellence and requires a theoretical and methodological apparatus that is truly geared to handling such problems of complex change over long time periods involving phases (McConvell, pers. comm.).

My study follows, not with any original intention, some of the approaches adopted by the Vienna school of the mid 20th century, which succeeded the *Kulturkreis* theory of earlier scholars. Koppers (1955:178), for example, explains that ethnologists "rely on the comparative study of culture traits for the purpose of establishing the areal, chronological, and causal factors" in the study of diffusion. The principal contribution of these researchers was probably to emphasise the inherent historical nature of human societies even among cultures that do not have written records testifying to the past, and in this sense they called attention to cultural dynamics and transformations through loans of social or material traits and their diffusion. While this school, and Koppers in particular, emphasised history as *the* aspect of what was called cultural or social evolution,[23] it is also clear that their understanding of history and the analysis of cultural transformation is, in non-literate societies, a matter of reconstruction.

What distinguishes in essence both the latter conception of social or cultural history and McConvell's critique quoted above from my own position is not so much the idea of reconstruction, but the method defined to attain it, and the time frame on which it is based. Indeed, McConvell (1985b:53-56) stresses Sapir's culture history approach, breaking away from the "speculative school of anthropology". Sapir (quoted in McConvell 1985b:56) emphasised that cultural phenomena "must be worked out historically, that is, in terms of actual happenings, however inferred, that are conceived to have a specific sequence, a specific localisation and specific relations among themselves".

The present study deviates in some respects from Sapir's and McConvell's principle. From another point of view, however, I believe my approach to be concordant with its underlying motive. I will not attempt to "work out historically" the cultural phenomena of sections in

[23] Across the channel, in Great Britain, Lord Raglan (e.g. 1957) had similar, albeit in some respects extreme, positions. Interested in questions of origins and diffusion of religious beliefs and practices, he underestimated the force of innovation and argued that cultural elaboration occurred only rarely (see Forde 1964).

the same way as Sapir and McConvell seem to understand it. The aim is not to analyse how, why and when section names came to be or were transformed. The section system is taken for granted, just as it is accepted without further elaboration that the terminology underwent linguistic transformations. On the other hand, this study clearly places the diffusion of the section system in terms of "actual happenings", of historical facts. Diffusion of sections in the Western Desert must have started at least by the end of the 19th century, but probably earlier, and is still progressing in the eastern parts of the desert where Pitjantjatjara people seem to be using the sections (and subsections) on an increasingly regular basis. During the 1930s, they progressed as far as the Northern Territory/Western Australia border to the north, and the Northern Territory/South Australia border in the south. How long exactly they took to reach these borders, however, is an unanswered question, for the approach adopted here is distinct from that applied by linguists, who seem to be able to derive an approximate age from the degree and nature of linguistic transformations. The methodology applied here relies on the examination of combinatory principles of a more or less synchronic corpus, from which it deduces a correlation (probability) and logic (structure) of the diffusional pattern. There is no way such an approach is able to comment on age and time. It simply grasps the synchronic map of distributional pattern, combines it with a comparison of structural relations of neighbouring systems, and hypothesises possible routes of diffusion and rules of transformation. In my defence, let me add that the corpus from which linguistic reconstructions and transformations are deduced is synchronic (or contemporaneous) as well. I believe that the nature of the data from which usual reconstructions are elaborated, and the historical assumptions derived from them, are not as different from those applied here as it may appear at first sight. A certain degree of speculation is inherent in all diachronic approaches.

I.e. Methodological preliminaries

In order to analyse variations in the nomenclature and to determine possible routes of diffusion into the region and among Western Desert groups, the terminology of some 24 tribes or groups for which reference to section names is explicit has been taken into account in the calculations, although certain discussions will include other groups as well. Three of those groups or places (Ngaatjatjarra, Ngaanyatjarra and Ooldea) have each been divided into two subgroups (Ngaatjatjarra 1, Ngaatjatjarra 2, Ooldea 1, etc.) because two nomenclatures meet there, producing systems with six section names (not, however, inevitably six-section systems). Thus, the corpus consists of 27 units with four section names each. Part three, elaborating on spatial distribution of logical systems, will discuss additional examples.

The first step is to group together into *categories of sections* cognate section names that may without hesitation be identified as having been deduced from each other. In view of the general questions formulated, it is not relevant here to treat, for example, the section name *Karimarra* differently from the section name *Karimera*, a variation for which the explanation is a linguistic task and not relevant in the study of the valeur of a section. I therefore take for granted that *Karimera* and *Karimarra*, as well as other such couples, are cognates. Although

this grouping may have been undertaken without much "scientific investigation", I did eliminate potential mistakes using two basic tools which I illustrate only briefly here.

The first relates to the combination of section names, and answers the following proposition: if two sections seem to be linguistically close but are used as distinct classes by one and the same group or tribe in their system, then they may not be included in the same category as they must be conceptually and semantically distinct.

The second relates to possible mistakes or differences in transcription of Indigenous terms, which is one of the major sources for variations in taxonomy. An example will illustrate this point. The vowel "o" and the combination "oo" do not exist in the Western Desert language. The phoneme [u:] (the elongated vowel [u]), corresponds to the English pronunciation of too. Thus, the transcription by English-speaking researchers of the phoneme [u:] into "oo". Boorgooloo and Burgulu are phonetically identical.

Following these two principles, the 42 different section names recorded are grouped into eight categories of sections, which are named for convenience, *Karimarra*, *Tjarurru*, *Purungu*, *Paljeri*, *Panaka*, *Burgulu*, *Milangka* and *Yiparrka*. Already we may hypothesise that, because four sections are necessary in a section system, these eight terms concord with two distinct section systems that must have met and combined or interchanged the terms. In some respects, this idea has some grounds. The situation, however, is more complex.

The analysis of these categories and their diffusion will follow three basic steps, in each of which the starting point follows a syllogistic form of reasoning: if "a implies b" is *true* and if "b implies c" is *true*, then "a implies c" is true as well. This is also congruent with the principle of Russel's "fourth type of truth" mentioned earlier. In the present case, this syllogism is only true for regional subsets. Nevertheless, it has the advantage of encouraging an approach to the diffusional pattern as being a set of interrelated conditions, consequences and relationships, in which, modifying the structural position or the semantic value of an element is likely to have consequences for some, if not all, other elements, in the same way as with the structure of kinship systems or languages.

This general theorem will be termed the *diasystemic map*, encompassing the disposition of section systems throughout the Western Desert. The notion of "diasystem" refers to Weinreich,[24] who, in a very important paper, elaborates modes of combining structural and dialectological studies of language. Weinreich (1968:307) writes that:

> Structural linguistic theory now needs procedures for constructing systems of a higher level out of the discrete and homogeneous systems that are derived from description and that represent each a unique formal organization of the substance of expression and content. Let us dub these constructions "diasystems", with the provisio that people allergic to such coinages might safely speak of supersystems or simply of systems of a higher level.

[24] I am indebted to Nicholas Evans who pointed me to Weinreich's work.

On page 314, he further writes that "constructing a diasystem means placing discrete varieties in a kind of continuum", and concludes (p. 317) that the combination of structural and dialectological studies (structural dialectology) has a "set of questions stemming from [an] interest in partial differences within a framework of partial similarity". This is exactly what the study of the diffusion of sections through the Western Desert is all about.

This diasystemic map is not solely an abstract concept, but reflects to some degree ethnographic reality. Equivalence rules between sections, structural articulations of systems and their geographical variations are, indeed, known and understood by Western Desert people, at least in my experience among Ngaatjatjarra-speaking people. This knowledge can be translated into a diasystemic map of systemic relations located in space that may not cover all of the Western Desert, but that encloses a variety of articulations and an impressive geographic vastness. The extent of this diasystemic map is a rather recent development, expanding as people have learned of systems employed by others in far-flung communities. Pragmatic equivalence rules are not theoretical constructs, but are applied knowledge among Aboriginal people. The variety of terminology and of structural arrangements of sections is culturally acceptable. However, the logic underlying the relationship between those terminologies and arrangements has to be known and understood in order to be operational. To a certain degree and to a certain geographic extent, therefore, the valeur of a section as defined earlier is not solely a methodological tool, but also an ethnographic fact.

The three analytical steps I mentioned earlier are ordered in accordance with increasing complexity, complexity being defined here on the basis of the number of structural elements and their interrelations that are taken into account. These steps are as follows:

1. *Spatial distribution of individual terms:* The aim is to draw in space the categories in which section names have been grouped. Simple findings on the absence or presence of a category in a specific geographical area will be presented, and approximate routes of diffusion of these categories will be suggested.
2. *Spatial distribution of pairs of terms*: In this second part, the combination of the categories will be examined, with the aim of studying their distribution as pairs. This part allows for formulating first hypotheses on mutual substitutions of categories.
3. *Spatial distribution of logical systems*: In this part, the internal structure of the systems is taken into account, that is, the structural position of categories in the systems used by the different groups. This third step also develops some particular case studies.

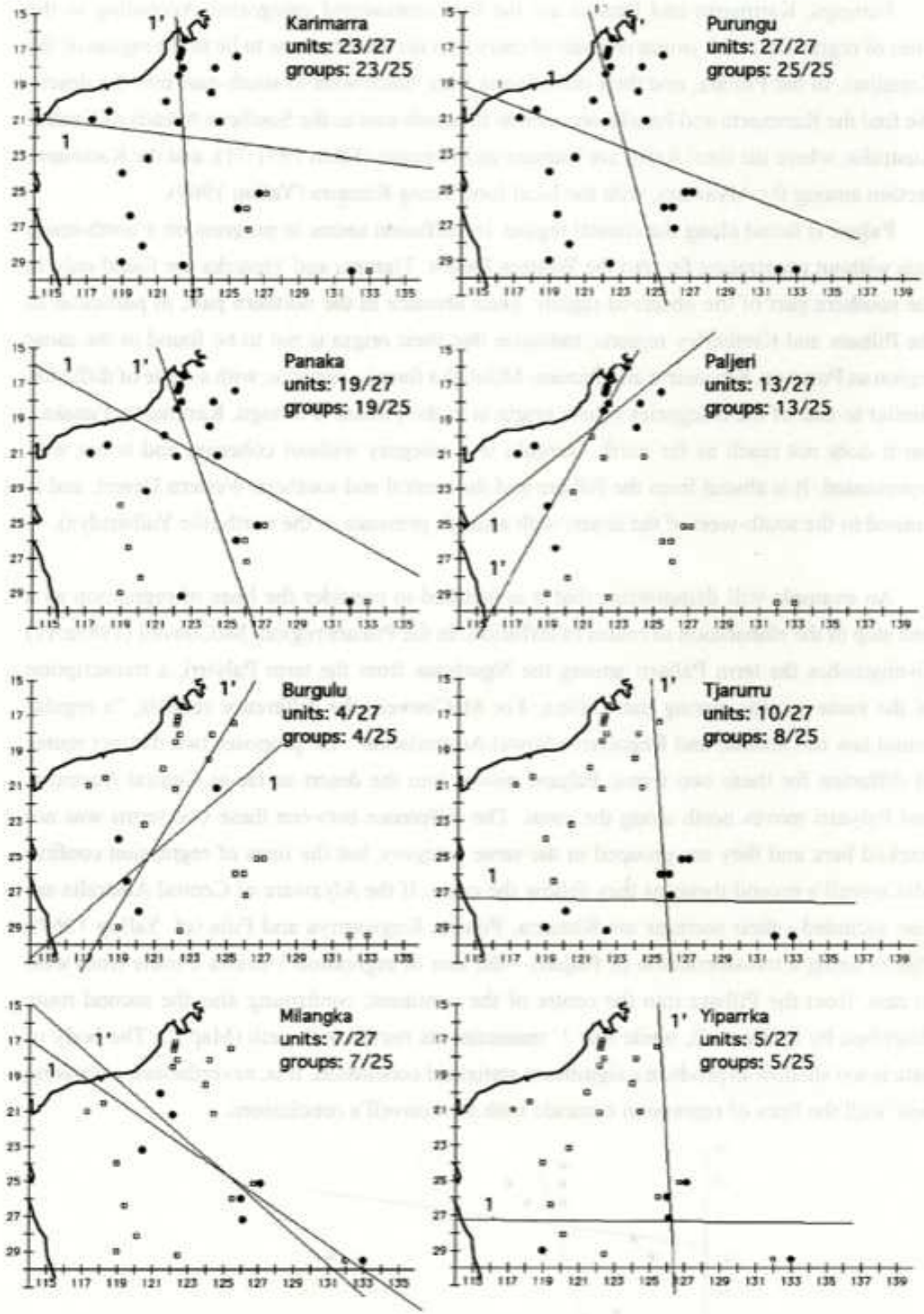
II. The Spatial distribution of individual terms

In this chapter, section categories are considered independently from one another, although every group in space has four of them. Map 6 shows the groups and the presence of the categories among those groups (bold circles) following geographic coordinates. Included is a linear regression describing the mean points of appearance of a category following geographical coordinates. Those lines of regression are, for the moment, considered as possible routes of diffusion. The points of intersection of the lines can be interpreted as locations through which each category has, with strong probability, diffused, as they comply with both types of regression. The underlying hypothesis is the banal assertion that if a category or section is known in several places, then these places are the "left-overs" of its initial diffusion. The lines of regression simply display mean routes between all places where such a category or section appears. Map 6 is preceded by Map 5, displaying the key to the spatial illustrations used in the following chapters.

Key to Map 5:

1 Bunaba (Bunuba)
2 Djaberdjabera (Jabirr Jabirr)
3 Djugun (Jukun)
4 Jawuru (Yawuru)
5 Kalamaia (Kalamaya)
6 Karadjari (Karajarri)
7 Kariera (Kariyarra)
8 Koara (Kuwarra)
9 Mandjindja (Manjiljarra)
10 Mangala (Mangarla)
11 Mardu (Jigalong)
12 Ngaanyatjarra (subsystem 1)
13 Ngaanyatjarra (subsystem 2)
14 Ngaatjatjarra (subsystem 1)
15 Ngaatjatjarra (subsystem 2)
16 Ngaiawongga
17 Ngarlawonga (Yinhawangka)
18 Ngarluma
19 Ngombal (Ngumbarl)
20 Njangamarda undal
21 Njangamarda Iparuka (Nyangumarta)
22 Njikena (Nyikina)
23 Njul Njul (Nyulnyul)
24 Ooldea (subsystem 1)
25 Ooldea (subsystem 2)
26 Waljen (Walyan)
27 Yulbaridya (Yulparitja)

Map 5: Key to location of groups



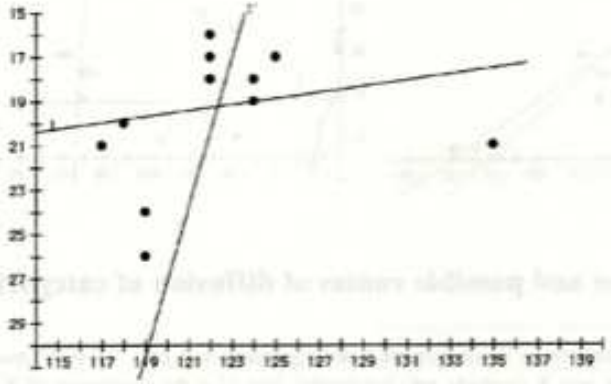
Map 6: Distribution and possible routes of diffusion of categories of sections[25]

[25] "Units" means including subgroups (Ngaatjatjarra 1 and Ngaatjatjarra 2, etc). "Groups" means without subgroups. Line 1 is the regression of Y into X (latitude into longitude), line 1' is the regression of X into Y (longitude into latitude). See the appendix, *Statistical tools*, for more information.

Purungu, Karimarra and Panaka are the best represented categories. According to the lines of regression, their origin or point of entry into the desert seems to be in the region of the Karadjeri, in the Pilbara, and their diffusion is from north-west to south-east into the desert. We find the Karimarra and Panaka sections as far south-east as the Southern Aranda of Central Australia, where the local forms are Kamara and Pananga (Elkin 1931:71), and the Karimarra section among the Alyawara, with the local form being Kimarra (Yallop 1969).

Paljeri is found along the coastal region. Its diffusion seems to progress on a north-south axis without penetrating far into the Western Desert. Tjarurru and Yiparrka are found only in the southern part of the observed region. Their absence in the northern part, in particular in the Pilbara and Kimberley regions, indicates that their origin is not to be found in the same region as Purungu, Karimarra and Panaka. Milangka forms a corridor, with a route of diffusion similar to that of the categories whose origin is in the Pilbara (Purungu, Karimarra, Panaka), but it does not reach as far north. Burgulu is a category without cohesion and is not well represented. It is absent from the Pilbara and the central and southern Western Desert, and is limited to the south-west of the desert with a single presence in the north (the Yulbaridya).

An example will demonstrate that it is justified to consider the lines of regression as a first step in the elaboration of routes of diffusion. In the Pilbara region, McConvell (1985a:11) distinguishes the term Paljarri among the Ngarluma from the term Palyirri, a transcription of the same section among the Kariera. For McConvell, the difference reflects, "a regular sound law of Lenition and Regressive Vowel Assimilation". He proposes two distinct routes of diffusion for these two terms. Paljarri moves into the desert as far as Central Australia, and Palyarri moves north along the coast. The difference between these two terms was not marked here and they are grouped in the same category, but the lines of regression confirm McConvell's second thesis as they follow the coast. If the Alyawara of Central Australia are also included—their sections are Kimarra, Pijarra, Kngwarriya and Pula (cf. Yallop 1969), Pijarra being a transformation of Paljarri—the line of regression 1 draws a route from west to east, from the Pilbara into the centre of the continent, confirming also the second route described by McConvell, while line 1' maintains its north-south path (Map 7). The body of data is too shallow to produce a significant statistical conclusion. It is, nevertheless, surprising how well the lines of regression coincide with McConvell's conclusions.



Map 7: Distribution of Paljeri including the Alyawara

From the spatial distribution of categories, we are now able to set up a rough typology.

Generalised categories: Purungu, Karimarra and, to a lesser degree, Panaka. These categories are spread among practically all groups and are the categories best dispersed in space. It is possible to call these categories "general categories" or "generalised categories". Panaka is not used in the south-western part of the observed region, so other categories must be replacing it.

Localised categories: Tjarurru and Yiparrka appear only in the southern and south-eastern part. Paljeri is exclusively used in the northern and north-western part. Milangka is enclosed in a corridor joining the two areas of Tjarurru/Yiparrka and Paljeri. These categories are found inside zones that are easy to delimit and are, therefore, called "localised categories".

Dislocated category: Burgulu is neither a well-represented category, nor one that is localised without ambiguity. What could be called a Burgulu zone is, in fact, interrupted by groups that do not use this section name. Because of its lack of distributional homogeneity, it may be called a "dislocated category".

III. The Spatial distribution of pairs of terms

The spatial distribution of individual terms confirms that understanding the diffusion of section names is not only a linguistic problem but also one that is made considerably more complex by the use of a greater number of terms than are structurally necessary. This means that either another terminological system has encountered the original terminology from the Pilbara area (or from the south-west if we go back even further in time), or that terms have been locally "invented".

The next step is compiling the frequency of joint appearances of two categories (their combination), in the same way as was done for the section names themselves when grouping them into categories. Indeed, *if two categories are never combined and they are localised or dislocated categories, then it is possible, from a general point of view, that they are mutually substitutable, that is. that at one stage in the diffusion, one term replaced the other*. Table 3 summarises the number of combinations between categories.

	Purungu	Karimara	Panaka	Paljeri	Tjarurru	Milangka	Yiparrka	Burgulu
Purungu	**27**							
Karimarra	23	**23**						
Panaka	19	19	**19**					
Paljeri	13	13	11	**13**				
Tjarurru	10	6	4	0	**10**			
Milangka	7	3	3	0	4	**7**		
Yiparrka	5	1	0	0	5	4	**5**	
Burgulu	4	4	1	2	1	0	0	**4**

Table 3: Combinations of sections

Categories that never appear together—zero in Table 3—will be called "complementary combinations"; they may theoretically be substitutable (e.g. Tjarurru and Paljeri). Categories for which the number of combinations is close to the total number of their appearances will be called "impossible substitutions". Panaka is, for example, combined with Purungu 19 times out of 19 appearances. It is, therefore, not possible for Panaka to replace Purungu, or vice versa. Let us discuss some of these relations.

- Purungu is used by all groups and combined with all other categories. Purungu has, therefore, never been replaced by another category, and may be considered as the core of the four-section system terminology.
- Karimarra is combined with all other categories, and is used among all groups[26] except for Ooldea 2 and the Mandjindja. Karimarra is an inherent category of the four-

[26] Karimarra is not used among one of each subgroup of the Ngaatjatjarra and the Ngaanyatjarra. Yet because these subgroups are a methodological artefact (see below), since both Ngaatjatjarra and Ngaanyatjarra groups possess a four-section system using six terms instead of four, Karimarra must be considered as being used by both of these groups.

section system terminology. However, it will be necessary to study its replacement by another category in Ooldea 2 and among the Mandjindja.

- Panaka is mostly combined with Paljeri. When Paljeri is used, so is Panaka, with the exception of two groups.
- Milangka appears jointly with Tjarurru in four groups out of seven. Milangka and Tjarurru are, therefore, not substitutable.
- Yiparrka appears jointly with Tjarurru in five groups out of five. Yiparrka is, therefore, not a substitute for Tjarurru.
- The number of combinations of Burgulu with other categories reflects its dislocated character. Except for the combinations with Purungu and Karimarra, which may be explained by the generalised character of the latter, Burgulu does not have a preferred combination with another category. Although used by four groups, it is combined with five different categories.

The lack of combination or joint appearance of two categories, the complementary combinations, will permit a preliminary formulation of general rules of substitution. Following is the list of complementary combinations, that is, the categories of potential mutual substitution, after which I will formulate some preliminary hypotheses:

Panaka	is never combined with	Yiparrka
Paljeri	is never combined with	Tjarurru, Milangka or Yiparrka
Burgulu	is never combined with	Milangka or Yiparrka

III.a First hypothesis: the Panaka–Yiparrka identity

Panaka and Yiparrka are, following a purely combinatory approach, not categories of mutual substitution. Indeed, the Ngaatjatjarra and the Ngaanyatjarra have each been divided into two sub-groups, because both dialectal groups use a total of six terms. Nevertheless, we are able to consider these two categories as "identical", because Panaka and Yiparrka are in an identical structural position in these two groups: the intermarrying category for both is Tjarurru. Thus, when Panaka and Yiparrka appear together in the same system, they function as synonyms, reinforcing the hypothesis that they are mutual substitutes for each other among other groups and systems.

Indeed, for Bates (cited in Elkin 1940:332), Yiparrka replaces Panaka. This thesis seems accurate for the Mandjindja, a neighbouring group of the Ngaatjatjarra and Ngaanyatjarra, but in other cases this substitution is doubtful. A globally recognised identity between Panaka and Yiparrka is not possible in all situations without threatening the internal coherence—and, above all, the transformation—of the system (see discussion below, in relation to the Pintupi).

We shall need to distinguish two kinds of identities between categories: the first will be called *relational identity*, and the second, *assimilatory identity*. Panaka and Yiparrka may

be identical by relation, but also by assimilation. The difference between these two types of identities is that, in the first type (relational), sections are only identical because of their relations with other sections, because of their structural position. They are *not* "organically" merged. In the second type of identity (assimilatory), two section names are conflated. They are "organically" merged. Thus, in assimilatory identity, the two sections are simply two names for a single section, while in relational identity the section names are associated with discrete social units (distinct people, when, for example, two dialectal groups meet) but stand in an identical structural position. The distinction will be further discussed within the case study of the Pintupi change from a four-section system to an eight-subsection system.

III.b Second hypothesis: the zone of extension and substitution of Paljeri

The mutual substitution of Paljeri and Tjarurru in the south-western part of the region was noted by Bates (1985:104-5) for the Koara. This rule may be extended to the Kalamaia and the Waljen, as they are close to the southern extension of Paljeri and within the northern extension of Tjarurru in this same geographical area.

The hypothesis of mutual substitution of Paljeri and Milangka in the central north-western area, among the Njangamarda (Nyangumarta), is put forward by McConvell (1985a:11). This rule may be extended to the Mardu, as they seem to have adopted the Inland Njangamarda system. We shall have to spend more time on the case of the Njangamarda. While the Coastal Njangamarda seem to use Milangka and Paljeri (Paljarri) interchangeably,[27] the Inland Njangamarda do not use Paljeri, but also use Milangka in a different structural position from its use among Coastal Njangamarda.

The hypothesis of mutual substitution of Paljeri and Yiparrka has, to my knowledge, not been proposed. If Paljeri is replaced by Tjarurru in the south-west and by Milangka in the north-west, yet not by Tjarurru in the south-east, then Paljeri may theoretically be replaced by Yiparrka in the latter area. I return to this hypothesis later, only noting here that if Paljeri is identical to Yiparrka, and if Yiparrka is identical to Panaka (the first hypothesis), then Paljeri should be identical to Panaka, which is, as we saw in the spatial distribution of individual terms, impossible.

Milangka and Tjarurru are never combined when one of them substitutes for Paljeri. Thus, in the central western part of the region, when Milangka is used, it replaces Paljeri, and, in the south-western part, when Tjarurru is used, it replaces Paljeri. Bates (1925) writes that, for the region of Mount Jackson (probably for people who were later called the Kalaako) Tjarurru replaces Paljeri.

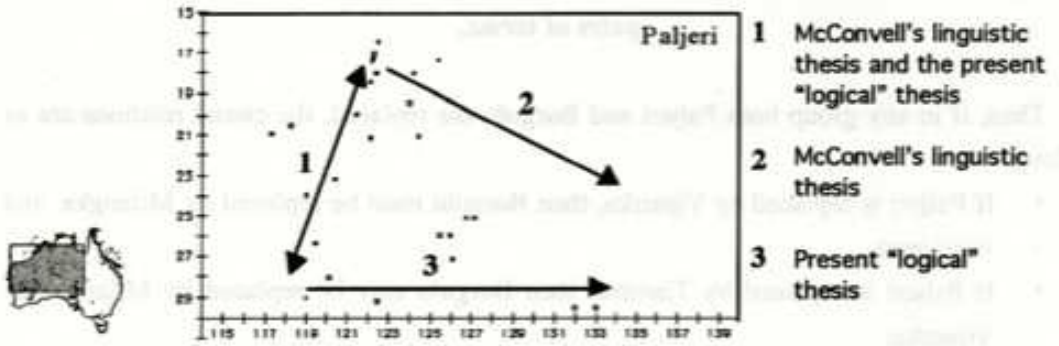
It seems, therefore, appropriate to draw a zone forming a vertical slice between the west coast of the continent and approximately 123° of longitude, which could be called the zone of extension and replacement of Paljeri, coded as "Paljeri --> Milangka : Tjarurru". Paljeri does

[27] McConvell pointed out to me that this system is identical to the Yindjibarndi sections (Dench 1995:8). The latter, however, have reversed the generations so that Njangumarta's Panaka = Purungu is equivalent to Yindjibandi's Karimarra = Paljeri; and Njangumarta's Karimarra = Milangka/Paljeri is identical to Yindjibandi's Panaka = Purungu.

not enter the desert, where Milangka replaces it, and below 27° of latitude Tjarurru replaces it. The extension of "Paljeri --> Milangka : Tjarurru" is what I have been calling a *valeur of a section*, that of Paljeri in this case.

What happens outside this Paljeri zone? Two hypotheses may be formulated. The first one would be to state that the valeur of Paljeri is, simply, absent there. This hypothesis easily resolves the problem, but contradicts the basic hypothesis according to which the diffusion of section names is accompanied by an underlying logic (the general diasystemic map) that organises the relations between them. The second hypothesis is, consequently, that the valeur of Paljeri is present, but that the term has been replaced by another category: the valeur changed content.

With the exception of Ooldea 1, all groups outside the zone "Paljeri --> Milangka : Tjarurru" possess the three categories that may potentially replace Paljeri: Milangka, Tjarurru and Yiparrka. To begin with Ooldea 1, the Berndts (1942-45) claim that this system moved to Ooldea from the west, probably with the Waljen. The Waljen are part of the sub-zone "Paljeri --> Tjarurru". Ooldea 1 is therefore an outgrowth, related to migrations, of the zone "Paljeri --> Milangka : Tjarurru". In summary, we have, for the diffusion and replacement of Paljeri, a first route alongside the coast from north to south, and a second route from west to east that borders the desert along its southern limit. We may, therefore, add to the linguistic routes of diffusion of Paljeri proposed by McConvell (1985a:11) a "logical" or statistical route, or a route of the "valeur of Paljeri", which equally leads to central Australia, but goes through the southern part of the region considered here (Map 8).



Map 8: Schematic "linguistic" and "logical" routes of the diffusion of Paljeri

III.c Third hypothesis: Burgulu may be replaced by Milangka or Yiparrka

Bates (1985:102) suggests that in the Upper Murchison, that is, among the Ngarlawonga, Burgulu would replace Panaka. If this assertion is correct for the Ngarlawonga, the Ngaiawonga and the Koara, two examples call this rule into question. The first is the reappearance of Panaka south-east of the Koara, among the Waljen; the second is the joint presence of Burgulu and Panaka among the Yulbaridya.

The thesis of the substitution for Burgulu by Milangka was proposed by Elkin (1940:332), but the substitution by Yiparrka does not seem to be postulated. If, following hypothesis III.a above, Yiparrka may substitute for Panaka, and if Panaka may substitute for Burgulu, then Yiparrka may also replace Burgulu. Elkin adds a second possibility when he writes that Milangka is identical to Karimarra. The implication of this would be that Milangka may not substitute for Paljeri (following the second hypothesis, III.b).

If we consider a zone similar to that described for "Paljeri --> Milangka : Tjarurru", we see that, when Burgulu is absent, Milangka is present and vice versa. The Kalamaia group is an exception, since it does not use Burgulu, Milangka or Yiparrka, which would lead to an identity between Yiparrka and Milangka, or a supplementary possibility: the substitution for Burgulu by Yiparrka. Outside this zone, Burgulu is never present, but Milangka always and jointly occurs with Yiparrka. The situation is confusing and the combinatory relations multiply, especially because they interfere with the zone "Paljeri --> Milangka : Tjarurru". Here I summarise the relationships between Burgulu and Paljeri in a figure showing possible substitutions (Figure 3).

Figure 3: Theoretical substitutions among categories in the spatial distribution of pairs of terms.

Thus, if in any group both Paljeri and Burgulu are replaced, the causal relations are as follows:

- If Paljeri is replaced by Yiparrka, then Burgulu must be replaced by Milangka, and vice versa.
- If Paljeri is replaced by Tjarurru, then Burgulu may be replaced by Milangka or Yiparrka.
- If Panaka is replaced by Yiparrka, two cases are possible:
  - Burgulu is replaced by Milangka, in which case Paljeri is replaced by Tjarurru only;
  - Burgulu is replaced by Yiparrka, in which case Panaka may also be replaced by Burgulu.

Reciprocally:

- If Burgulu is replaced by Milangka, Paljeri must be replaced by Tjarurru or Yiparrka.
- If Burgulu is replaced by Yiparrka, Paljeri must be replaced by Tjarurru or Milangka.

I now discuss the problem group by group for this western area.

Kalamaia: Paljeri and Burgulu are absent. Burgulu is replaced by Yiparrka (complementary combinations). Paljeri must therefore be replaced by Tjarurru.

Koara: Burgulu is present, Paljeri is absent. Paljeri is replaced by Tjarurru (complementary combinations).

Ngaiawongga: Burgulu and Paljeri are present. Tjarurru, Yiparrka and Milangka are absent. No substitution.

Ngarlawonga: Burgulu and Paljeri are present. Tjarurru, Yiparrka and Milangka are absent. No substitution.

Mardu: Burgulu, Paljeri, Tjarurru and Yiparrka are absent. Milangka is present. Milangka cannot substitute for Burgulu and Paljeri at the same time. The Mardu may, therefore, not figure in the same register as the preceding groups.

Njangamarda: same as for Mardu (see below).

Yulbaridya: Only Burgulu is present. Paljeri is not present and is not substituted for by Milangka, Yiparrka or Tjarurru, so the Yulbaridya may not figure in the same register as the other groups (see below).

The Burgulu–Paljeri problem has to be divided up into zones. In the north, the Kimberleys and the coast in the region of the Kariera, we find only Paljeri. South and south-east of this zone we approach a zone of transition. The first type of transition is the replacement of Paljeri by Milangka, because Karimarra, Panaka and Purungu are all present (cf. "Paljeri --> Milangka"). The second type of transition is the replacement of Paljeri by Burgulu (among the Yulbaridya), because Karimarra, Panaka and Purungu are present. The third type of "transition" is one in which Paljeri and Burgulu are jointly present. A last type of transition, proposed by Bates (1925), must be added if we exclude the Yulbaridya: it is the mutual substitution of Panaka and Burgulu and, therefore, also of Yiparrka (Figure 4).

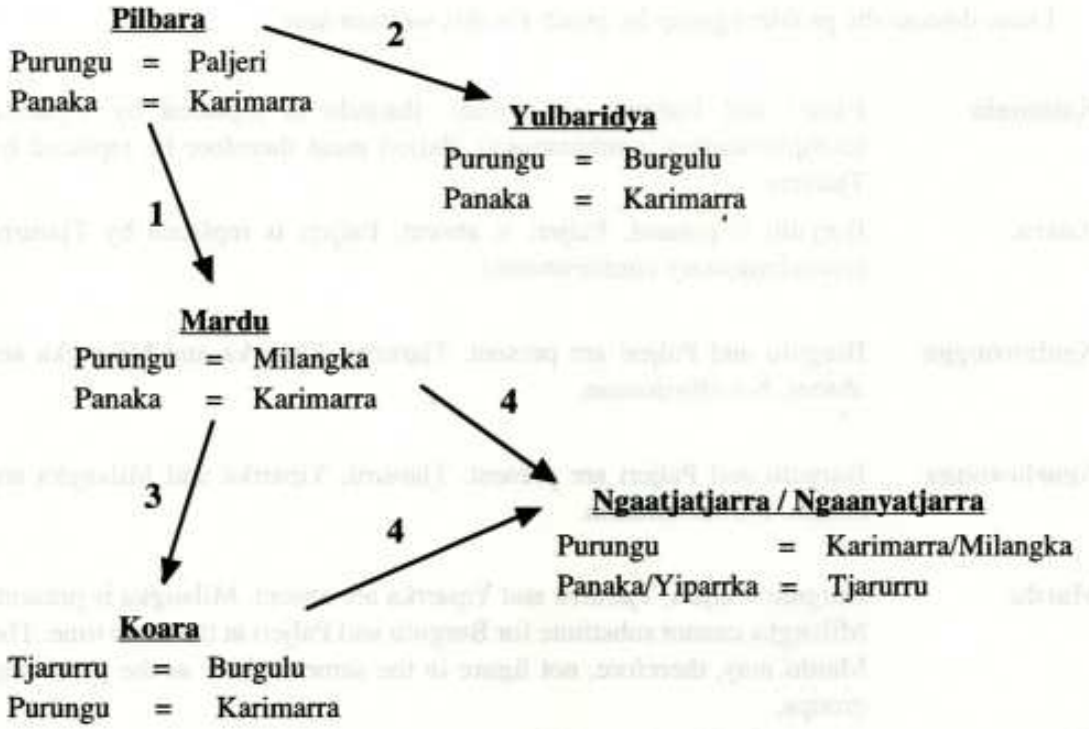


Figure 4: Transitions from the Pilbara area

1 Pilbara—>Yulbaridya: Panaka and Karimarra moved without change in their intermarrying position. Burgulu replaced Paljeri. Paljeri, therefore, spread out following two valeurs. The first one is, as already mentioned, the valeur [Paljeri —> Milangka : Tjarurru] progressing southwards. To the east, on the other hand, it is Burgulu that took the place of Paljeri [Paljeri —> Burgulu].

2 Pilbara—>Mardu: Panaka and Karimarra moved without change in their intermarrying positions. Milangka replaced Paljeri. Note that the dialectal groups constituting the Mardu at Jigalong today were formerly further east inland.

3 Mardu—>Koara: This time, when Purungu and Karimarra spread, their structural positions (intermarrying categories) changed. It is necessary to examine the Ngaiawongga, located between the Mardu and Koara, to understand what happened. The sections of the Ngaiawongga are as follows:

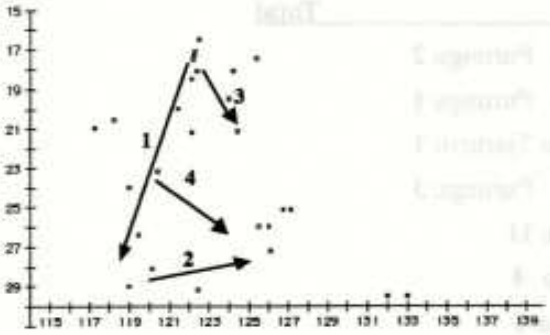
Purungu	=	Paljeri
Burgulu	=	Karimarra

We can see here that Paljeri took the place of Milangka as known among the Mardu. We can also see that Burgulu replaced Panaka. When progressing from the Ngaiawongga to the Koara, the following change in structural position occured: matrilineal filiation

became patrilineal filiation, and vice versa. Tjarurru replaced Paljeri, but the child of a Tjarurru woman (substituted for Paljeri) is now Purungu, marrying Karimarra.[28]

4 Mardu, Koara—>Ngaatjatjarra, Ngaanyatjarra: Here we find a diffusion of a combination of the Mardu and the Koara system: Purungu marrying Milangka, and Purungu marrying Karimarra. The combination results in an assimilation of Karimarra and Milangka. We shall see later that Karimarra has probably progressed into the desert only from the south-west, by way of the Koara, in common with Tjarurru and Yiparrka.

Again, the Yulbaridya case presents a twofold problem. First, this is the only group where Burgulu and Panaka are jointly present. Second, it is not Milangka but Burgulu that replaces Paljeri among the Yulbaridya (cf. McKelson 1980).[29] To understand this complexity, it is necessary to extend the field of combinations of categories to analyse not only the joint appearance of two categories, but of four. A first solution is, however, already available: two logics of combinations of section names have been progressing following two principal routes. To conclude the discussion of this hypothesis III.c, I represent them in space (Map 9).



1:	Paljeri	-->	Milangka : Tjarurru
	Panaka	-->	Burgulu
2:	Paljeri	-->	Tjarurru
	Burgulu	-->	Yiparrka
3:	Paljeri	-->	Burgulu
	Panaka	-->	Panaka
4:	Panaka	-->	Panaka

1 and 2: First route

3: Second route

Map 9: Routes of diffusion and replacement of Paljeri and Panaka.[30]

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[28] Lee Sackett pointed out to me that the Kuwarra (Koara) system was reported by others as follows:

Tindale (1939:916)			Liberman (1977)		
Taroro	=	Burukulu	Tjarurru	=	Yiparka
Karimara	=	Purungu	Karimara	=	Purungu

According to these data, the transformation only implies an equation of Yiparrka and Burgulu over time.

[29] There is another astonishing feature reported for the Yulbaridya (Yulparitja). Indeed, Tindale (1953:20) reports the following system:

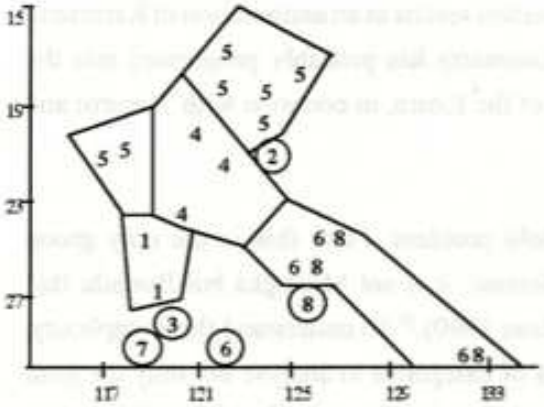
Panaka/Purukula	=	Karimarra/Purungu
Karimba	=	Paritjarri

Provided Paritjarri is a cognate of Paldjari or Paljeri, this system seems to reflect an amalgamation of the Yulparitja system as reported by McKelson and the systems reported for the Broome area and environments, among groups such as the Djaberdjabera, Jawuru, Ngombal, Njul Njul and the Karadjeri, where Garimba is reported to espouse Paldjeri. Tindale is reporting an older system, so it seems that the synonyms Panaka/Purukula and Karimarra/Purungu were divided each into father-children sections, replacing the former Karimba and Paritjarri couple.

[30] Some additional explanations are necessary. In step 1 (Paljeri --> Milangka : Tjarurru), Paljeri has already been

III.d Combinations of four categories

Each group under consideration possesses at least four section names. Of the 70 possible combinations of four elements, only eight are found. They are placed in space and grouped into rough zones (Map 10).



Key to Map 10

Zone No.	Combination			Total
1: Burgulu	Karimarra	Paljeri	Purungu	**2**
2: Burgulu	Karimarra	Panaka	Purungu	**1**
3: Burgulu	Karimarra	Purungu	Tjarurru	**1**
4: Karimarra	Milangka	Panaka	Purungu	**3**
5: Karimarra	Paljeri	Panaka	Purungu	**11**
6: Karimarra	Panaka	Purungu	Tjarurru	**4**
7: Karimarra	Purungu	Tjarurru	Yiparrka	**1**
8: Milangka	Purungu	Tjarurru	Yiparrka	**4**

Map 10: Distribution of combinations of categories by four

Three obvious zones are distinguishable. Zone 5, with the combination Karimarra-Paljeri-Panaka-Purungu, is situated in the Pilbara and Kimberley regions. This zone is interrupted by Zone 4, with the combination Karimarra-Milangka-Panaka-Purungu. The only difference between Zones 4 and 5 is that Milangka in the latter replaces Paljeri in the former. Remember, however, that the Coastal Njangumarda (Njangamarda) seem to be using Milangka and Paljeri interchangeably.

Adjacent to these two zones is Zone 1, with Burgulu-Karimarra-Paljeri-Purungu, in which the only difference from Zone 5 is that Burgulu replaces Panaka (Bates's hypothesis).

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replaced by Milangka; this formulation means that it is the valeur of Paljeri that diffuses under the names Milangka and Tjarurru. In step 3, (Panaka --> Panak) simply means that Panak diffuses without substitution.

The other zones are less clear. Zones 6 to 8 seem to be the locus of an encounter between combinations 6 and 8. While combination 6 adds the category Tjarurru as a new element, combination 8 introduces the categories Milangka and Yiparrka.

If we consider that, contrary to the Ngaatjatjarra and Ngaanyatjarra, Ooldea is composed of two distinct systems, we can see that the encounter between combinations 6 and 8 is located north of 27 degrees of latitude; that is, where the corridor of the category Milangka encounters Tjarurru and Yiparrka, and where Milangka and Karimarra become mutually substitutable.

The combinations 7, 3 and 6, close to one another, are characterised by the presence of Karimarra, Purungu and Tjarurru, which are their basic categories. Mutual substitutions are between Burgulu, Yiparrka and Panaka.

Combination 2 is similar to combinations 4 and 5. It uses Karimarra, Panaka and Purungu, but Burgulu replaces the Paljeri of combination 5 and the Milangka of combination 4. We have here the only case where Panaka and Burgulu appear jointly.

The combination of four categories reinforces certain hypotheses formulated above, making it possible to draw a preliminary map with routes of diffusion and substitutions of section names. The analysis of the spatial distribution of logical systems will add solidity to these hypotheses and allow, once some specific cases are examined, the elaboration of a general view.

IV. The Spatial distribution of logical systems

I now consider the structure of the different section systems, that is, the links between the categories established through the formal rules of marriage and filiation. As noted earlier, categories are not only present, as such, in the social organisation of each group, but are also combined in an explicit pattern (see Figure 1). With the help of the general rules or hypotheses formulated above, I now elaborate a regional typology that will take into account the structural position of categories.

Two premises will guide the analysis:

- two categories are only mutually substitutable if they are not intermarrying; and
- two categories are mutually substitutable if they intermarry with the same third category.

Table 4 details the number of structurally possible marriages between categories found among the groups studied. For example, Karimarra and Purungu are in an intermarrying relationship among seven groups.

	Purungu	Karimarra	Panaka	Paljeri	Tjarurru	Milangka	Yiparrka	Burgulu
Purungu		7	10	3		6		1
Karimarra			4	9		1		2
Panaka				1	4			
Paljeri								
Tjarurru							5	1
Milangka								
Yiparrka								
Burgulu								

Table 4: Number of marriages between categories

IV.a. Impossible marriages

Of the 28 types of possible marriages between categories, only 13 are found. The superimposition of the frequency of these types of marriages with the frequency of the complementary combinations (see Chapter III) allows me to advance the proposition that *if a type of marriage does not appear, although the combination of the two categories is not zero, then the relation between these categories must be one of filiation.* Thus, Purungu and Tjarurru never intermarry, although they may be jointly present. The relation between these two categories is therefore a relation of filiation.

Karimarra never marries Tjarurru or Yiparrka. Karimarra and Tjarurru may, therefore, and for the same reasons as mentioned for Paljeri and Burgulu, be mutually substitutable. This is also what Christensen (1981:368) explains, noting that Tjarurru replaces Karimarra if one moves from the Mardu (Zone 4) to Wiluna, where the sections are Purungu-Milangka-Panaka-Tjarurru. For Christensen, the Wiluna system came from the north-west, although,

with respect to the findings presented here, it must have moved in from the west, because of the replacement of Paljeri. Thus, when Tjarurru replaces Paljeri, Milangka replaces Karimarra. Indeed, Wiluna is at the border of Zones 1 (Burgulu-Karimarra-Paljeri-Purungu) and 4 (Karimarra-Milangka-Panaka-Purungu). At Wiluna, Tjarurru replaces Paljeri and Milangka replaces Karimarra of Zone 1; and Panaka is identical to Zone 4 and replaces Burgulu of Zone 1. Wiluna may, therefore, be integrated easily into my hypothesis of the valeur "Paljeri --> Milangka : Tjarurru".

Panaka should, according to the system, never marry Milangka or Burgulu. Here I return to the case of the Yulbaridya. This group is the only one where Panaka and Burgulu meet, and the relation between these two sections is one of filiation between mother and child. How can we interpret this phenomenon? I have shown that, along the coast and to the limits of the desert, Paljeri is either replaced by Milangka or by Tjarurru. We have also seen that Zone 4, which includes the Mardu for example, follows a different principle because Burgulu, Paljeri, Tjarurru and Yiparrka are absent, and Milangka may not replace Paljeri and Burgulu simultaneously. In order to construct the area of extension [Paljeri --> Milangka : Tjarurru], I opted for the substitution Milangka --> Paljeri, leaving aside the problem of Burgulu. I now return to Burgulu in relation to the Pintupi case.

IV.b The Pintupi, or the transition from four sections to eight subsections

The Pintupi, northern neighbours of the Ngaatjatjarra, have an eight-subsection system, but this was not always the case. According to Fry (1934), the Pintupi in 1932 still used a four-section system with five terms, which was beginning to accommodate itself to the subsection system of their eastern neighbours, the Luritja.[31] These 5 sections were arranged as follows:

Taruru	=	Panaka / Iparka
Purukula	=	Purunga

The similarities between the Pintupi system and other section systems are undeniable: the Pintupi section names Tararu and Iparka, which we found in the south-west and south, and Purunga (Purungu) and Panaka, which we have seen in the Pilbara systems. Purukula, which is sometimes also found as Purrukulu, corresponds to the category Burgulu found principally in the south-west and among the Yulbaridya, north-west of the Pintupi.

Myers (1986:183) notes that, according to the Pintupi, their system was brought to them from the north by mythological creative beings known as Tingarri. Most probably it is the eight-subsection system they were talking about, although it may recall earlier mechanisms relating to the arrival of the four-section system as well. With the adoption of the new system, the Pintupi introduced new section names which are marked by gender, but in which it is still possible to find some of the categories discussed above (McConvell 1985a):

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[31] In fact, they seem to have been Ngalia people, who today regard themselves as Ngalia Warlpiri.

Tjupurrula, napurrula : Purrula is found among the southern Aranda (Elkin 1931:71)
Tjapanangka, napanangka : Panaka
Tjapaltjarri, napaltjarri : Paltharra or Pultara among the southern Aranda and the category Paljeri
Tjakamarra, nakamarra : Karimarra

I return now to the first system reported for the Pintupi, the four-section system. Fry (see also Elkin 1940:331) suggests that the Pintupi and Luritja sections corresponded to each other in the following way (the gender prefixes have been left out):

Pintupi	*is equivalent to*	*Luritja*
Tararu		Pananga and Ngarai
Purunga		Pangarti and Paltjari
Purukula		Kamara and Mbitjinba
Iparka		Tangala and occasionally Parula
Panaka		Parula only

In this system, which recalls that of the northern Aranda (cf. Spencer & Gillen 1927) and that of the Warlpiri (Meggitt 1986), and of which the terms are those proposed by McConvell (1985a) as being the "Proto Southwestern Subsection Terms",[32] it seems that what happens is first a substitution of terms, then an adaptation of marriage and, finally, a transformation of rules of filiation between sections, such that, in contrast to the four-section system, the section of a female Ego's daughter's daughter is no longer identical to Ego's own section.

Some remarks are warranted here. According to Elkin (1940:332), in substituting Karimarra for Purukula (Burgulu), the old Pintupi system resembles the system found south of the Mt. Margaret region, that of the Waljen; also, in replacing Milangka for Purukula (Burgulu), it resembles the system of the Mandjindja.

Pintupi		*Waljen*		*Mandjindja*	
Tararu	Panaka/Ibarga	Tararu	Panaka	Tararu	Ibarga
Purukula	Purunga	Karimara	Burunga	Milanga	Burunga

Still following Elkin, this proves the equivalence between Panaka and Ibarga (Yiparrka). Indeed, if we trace a line from the Waljen to the Mandjindja and the Pintupi, we find on the way the Ngaatjatjarra and Ngaanyatjarra, who know Karimarra and Milangka in place of Purukula (Burgulu) and who use Panaka and Yiparrka as synonyms.

Douglas (1977a, 1977b) has described the Ngaanyatjarra system as a six-section system, such as that used in Ooldea. While working with Ngaatjatjarra and Ngaanyatjarra people, I was unable to discover such a system, but instead, discerned a four-section system with six

[32] "Southwestern" means here south-east Kimberleys, north of the Yulbaridya, and the whole central west of the Northern Territory and Central Australia.

terms. However, it is possible that, since Douglas did his research, the six-section system has collapsed into a four-section system with assimilatory identities (see the case of Kalgoorlie below), although the genealogies I collected do not reflect such a transformation, at least not among the Ngaatjatjarra. Against Douglas, De Graaf (1995) maintains that there has never been a six-section system at Warburton among the Ngaanyatjarra.

Purrukula (Burgulu) does not seem to have progressed to the Pintupi on a south-north (or south-west to north-east) axis, that is, passing through the Ngaatjatjarra, but must have moved to the Pintupi from the Yulbaridya area, that is, from the north-west (southern Kimberleys).

The case of the Pintupi allows me to address another question related to the process of transition from four sections to eight subsections, which concerns the transformation of Tjarurru. This transformation suggests that Yiparrka and Panaka are not simply identical or mutually substitutable, but that one must take into account the difference between what I have called *assimilatory identity* and *relational identity*.

The category Panaka is present in both the old and new Pintupi systems. In the old system, Panaka marries Tjarurru. In the new, Panaka replaces Tjarurru. At the same time, the old Panaka is replaced by the new Parula. However, the section Parula (Purula) of the southern Aranda marries Panaka (Pinangka) (cf. Elkin 1931:71). The transition from one system to another has not been a simple replacement, but an adaptation of the two systems conditioned by contacts between the Pintupi and their neighbours. It seems, then, that at some stage in the process of transition, when Tjarurru was being replaced by Panaka and Panaka[33] by Parula, Panaka men married Panaka women, which is improbable.

There is a rather simple, albeit very speculative, solution to this problem. Panaka and Yiparrka are, in opposition to what Elkin wrote, not completely mutually substitutable and, when Panaka replaces Tjarurru, Parula must have replaced Yiparrka. Thus, we have here two valeurs for each of the categories. One defines an equivalence of Panaka and Yiparrka, the other illustrates an equivalence between Panaka and Tjarruru on the one hand, and between Yiparrka and Parula on the other. We see that, even if Yiparrka and Panaka were in identical relations to other categories, they were separable when it was necessary to re-group individuals into new sections. A division of Yiparrka / Panaka would have been impossible if those two "sections" were identical by assimilation, that is, if those two terms were synonyms for a single section in the system, as we have seen among Ngaatjatjarra-speaking people.

To return to the Burgulu problem, the marriage couple, Tjarurru = Panaka/Yiparrka, of the old Pintupi system is identical to that found among their southern neighbours, the Ngaatjatjarra. The second couple, Burgulu = Purungu, is identical to the one found among the Yulbaridya in the west and north-west, confirming the routes of diffusion suggested earlier. In summary (Map 11):

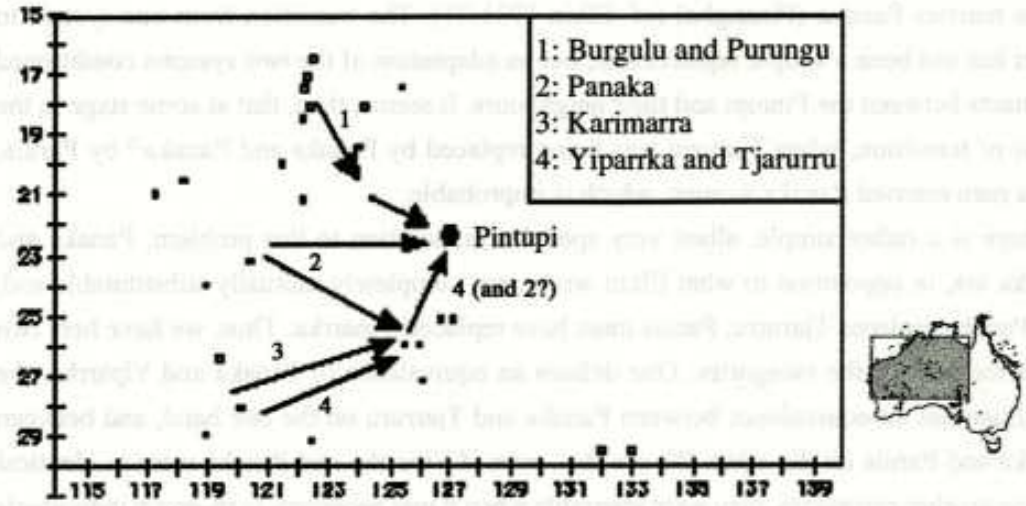
[33] Pintupi and Ngaatjatjarra recognise the identity of the terms Japanangka and Panaka. This is reinforced by the absence of a terminological distinction between first and second cross-cousins.

- Burgulu follows two distinct routes, but does not directly penetrate the desert. The first route follows the coast, where it is replaced by Yiparrka or Panaka. The second route stops at the Yulbaridya where it replaces Paljeri. We see now that this second route leads to the Pintupi.

- Tjarurru, which replaces Paljeri, penetrates the desert from the south-west and moves north-east. It is found among the Pintupi.

- Milangka and Karimarra, penetrating the desert from the west and south-west, terminate their route of diffusion among the Ngaatjatjarra because they are, in this group, identical by assimilation. The Pintupi did not use Milangka or Karimarra.

- Panaka and Yiparrka, both replacing Paljeri, are in relational identity among the Pintupi. Yiparrka, replacing Panaka in the south-west, progresses on its own into the Western Desert where it meets Panaka again coming from the Mardu further north.



Map 11: Diffusion of sections in the Western Desert to the Pintupi

IV.c. Nyangumarta: the inland and the coastal system

I mentioned earlier that the Njangumarda (Nyangumarta) are split into two systems, the Coastal or Northern Njangumarda, whom O'Grady and Mooney (1973) call Wanyarli, and the Inland or Southern Njangumarda, who are named Ngulipartu. These groups were labelled Kundal (coastal), and Iparuka (inland) by Tindale (1974). According to O'Grady (1964:vii), Wanyarli and Ngulipartu are dialects that share 94 per cent of their basic vocabularies, the most significant morphological difference being that the "3rd singular actor is overtly marked by a suffix in certain sequences in Wanyarli, but not in Ngulipartu."

Nyangumarta are not a Western Desert dialectal group. Their language is quite distinct from the Western Desert's Wati-language, and is classified by O'Grady, Voegelin and Voegelin (1966) as Marrngu, the latter sharing between 21 and 25 per cent of cognates with the Western Desert language (O'Grady 1964: map preceding p. vii), even though their traditional area touches the Great Sandy Desert in the east and north-east. The Nyangumarta section system comprises, as we have seen for the Pilbara in general, the terminology used throughout the Western Desert. Their proximity to the desert makes them likely actors in the diffusion of the system into eastward areas, a situation that is reinforced by some claims that Nyangumarta were, in fact, further inland until White settlement, and that Karajarri (Karadjeri) was spoken along the coast previously.[34] A similar argument is advanced by Tindale (1974:253) regarding the Njamal, the south-western neighbours of the Nyangumarta. He explained that they were gaining territorial areas west of the Shaw River in the late pre-contact era at the expense of Kariara (Kariera, Kariyarra) and Yindjibarndi areas. I will come back to some of these migrations below.

With regard to the section system, the situation is made more complex by a varying application of the section terminology between the Coastal and the Inland Nyangumarta. Tindale (1974:253) recognised the "different and conflicting arrangements of four-class social organization" between the two groups, which he writes are "preventing intermarriage". O'Grady and Mooney (1973) report the following systems:

Coastal (northern) Njangumarda			*Inland (southern) Njangumarda*		
Panaka	=	Purungu	Panaka	=	Karimarra
Karimarra	=	Milangka/Paljeri	Purungu	=	Milangka

While identical terms are used in both groups, there is an important difference in the systems' structure. A coastal Karimarra woman, for example, marries a man who would be her son in the inland system. Sharp (1998:28) explains how the two systems map onto each other:

> A Purungu person in the southern system would be Karimirri [Karimara] in the northern and a Karimarra person in the southern system would be Purungu in the northern. A Milangka person in the southern system would be Panaka in the northern and a Panaka person in the southern system would be Milangka in the northern system.

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[34] This is a claim reported in Nicholas Thieberger's Handbook of Western Australian Aboriginal languages south of the Kimberley Region (1996), available at: http://coombs.anu.edu.au/WWWVLPages/AborigPages/LANG/WA/wahbk.htm.

The spedific Nyangumarta page is at: http://coombs.anu.edu.au/WWWVLPages/AborigPages/LANG/WA/4_5_5.htm

How could such a structural difference come about? The possible explanations alluded to below are solely hypotheses and must be taken with caution. One is a structural hypothesis; the other elaborates on historical aspects of possible transformations. The structural hypothesis advances the proposition that the differences between the two systems are the result of a skewing pattern in the terminology that accompanied a unilateral—matrilateral—marriage proscription. Such unilateral pro- and prescriptions are reported in the literature for Karadjeri and Nyangumarta people (O'Grady & Mooney 1973:6). Skewing is a feature that reflects cases in which two generations are conflated into a single one, so that, for example, a person's mother's brother and mother's brother's son are not distinguished terminologically. The two categories or generations are skewed. Generally speaking, skewing has not been widely reported for Australia, and only recently (McConvell & Alpher 2002) has there been evidence for such a widespread pattern among Australian groups. In most cases, this particular use of the terminology seems to be linked to marriage, or in fact the avoidance of certain marriages. Skewing overlies the more conventional terminological usage where marriage with the "skewed" person is not desired. It could well be that the differential structural arrangements of the Inland and Coastal Nyangumarta systems reflect such a skewing pattern that, interestingly, would be justified in inter-dialectal relationships only (that is, in a proscription of inter-dialectal marriages as Tindale suggested).

The father-son relations are identical in both systems: Purungu-Karimarra and Panaka-Milangka constitute the patricycles. The same is true, obviously, for the relationship between Ego and his/her spouse's mother, which follows the same cycle as the father-son relation. Considering inter-group marriages, however, it does appear that there is a skewing of mother, mother's brother and spouse. If the marriage pattern is defined with respect to the mother-in-law (father's sister), then the systems are coherent. If marriage is defined with respect to matrilateral relatives, then combination and prescription of the spouse category is a difficult calculation. These facts would tend to point to preferential patrilateral marriages, that is, with cross-cousins issuing from the father's side, and would predict a social solidarity, in the form of clans or other social entities, that would be matrilateral or even matrilineal. Unfortunately, marriage prescription was described by O'Grady and Mooney as being matrilateral, and not patrilateral, and they do not record, or at least report, any skewing pattern in the kinship terminology. Moreover, if this hypothesis were correct, then one would have to assume that skewing was only applied in inter-dialectal relationships, and would be restricted to two sections, not four.

On the other hand, there also is some evidence supporting the structural hypothesis: Geytenbeek (quoted in Sharp 1998:29) does not mention a matrilateral preference, but rather a matrifilial emphasis, as a child's section is determined by that of the mother (Sharp 1998:26). However, the lack of concrete genealogical material and ethnographic accounts of the terminological usage before and after a cross-dialectal marriage gives the structural hypothesis little explanatory capacity.

The historical explanation is therefore more probable. The Coastal Nyangumarta use a system that is similar to that of their northern neighbours, the Karadjeri. The terminology and

structural arrangements are identical, with the exception of Milangka and Paljeri, the former being the term used by Nyangumarta, the latter by Karadjeri. As we have seen earlier, these section names are part of the Paljeri valeur and are mutually substitutable throughout most of the areas considered in this study. On the other hand, the system of the Inland Nyangumarta is identical to that of their eastern Western Desert neighbours, the Mardu and the various groups from which they are composed. The explanation is, therefore, rather simple, being based on the assumption that the Inland system is the "original" Nyangumarta system, and also the one that diffused eastwards into the desert, while the Coastal system is the result of a structural rearrangement undertaken by those Nyangumarta who, with settlement from 1864 onwards (Sharp 1998:7) or earlier, moved towards the coast into or close to Karajarri (Karadjeri) country. While I do not, unfortunately, have sufficient data to reject or confirm such a hypothesis, it nevertheless fits well into the regional and global picture, and confirms that the Pilbara area, with the Nyangumarta as a particular case, has played a major role in the diffusion of the section system towards the Western Desert by way of the Great Sandy Desert area (see route 2 in Map 11 above).

This is confirmed by other reports, such as the migrational pattern mentioned by Petri (1956) and Petri & Petri-Odermann (1970), who indicate movements that directly concern the Nyangumarta. In 1954 Petri observed that Yulparitja[35] people were moving northwards from the desert towards the coast. As we have seen, Yulparitja people (Ngangatara people from the north-western area of the Western Desert) were also active in the diffusion of the section system eastwards towards the Pintupi area. These Yulparitja were, Petri explained, feared as being strange unknown people, who had brought *dinari-kuran-gara* (the Tingarri-cycle[36]) as far as Anna Plains (Pilbara) and the De Grey River from south of Lake Disappointment, that is, from well in to the Western Desert.

This westwards drift of Western Desert people seems to have been the repetition of what Nyangumarta had earlier undertaken themselves. Petri and Petri-Odermann (1970:274) quote a Karadjeri (Karajarri) man who observes that the coastal area was originally Nada-Nada country, that is, northern Karadjeri, but that this area had been occupied by Nyangumarta coming from the south. Similar statements are found in McKelson (1989:1), who explains that Nyangumarta were once desert people who had moved north-westwards towards the coast. In the light of such reports, the historical hypothesis mentioned above gains some plausibility, and is, indeed, confirmed by Bagshaw's (2000:8) evaluation of previous researcher's statements: "Closer analysis of major narrative traditions ... would have revealed that much, if not all, of the district between Anna Plains Station and Salt Creek is traditionally owned by Karajarri people". At this stage, we will, therefore, accept that the Northern Nyangumarta system is the result of an adaptation to the Karadjeri system following migrations, and that the Southern or

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[35] Petri acknowledges, rightfully, that the people he calls Yulparitja might well have been Mandjildjara (Manyjilyjara) from south of Lake Disappointment. What is of interest is that they were people from the north-western area of the Western Desert cultural bloc.

[36] The Tingarri-cycle is a mythological-ritual complex important in the Western Desert and known by Pintupi, Ngaatjatjarra and other dialects to the east of the Pilbara.

Inland Nyangumarta system is the "original" system, or at least the system that had diffused eastwards and south-eastwards into the Western Desert.

IV.d. The case of Laverton: first encounter between Waljen and Mandjindja

Elkin (1940:315ff.) has noted the meeting of two different systems in the region of Laverton and Mt. Margaret Mission: that of the Mandjindja and what he terms the system of Laverton, which is in fact the Waljen system (see the Pintupi case, above, where the respective systems are presented). The encounter between these two systems produces combinations that are somewhat unusual. One would expect that, as with other groups in the same region, Ibarga and Panaka (like Karimarra and Milangka) would be "identical". Yet this is not the case. Figure 5 summarises what Elkin (1940:317) reports. The figure must be read bottom-up or top-down. If it is read bottom-up, then the first column is the wife, the second column the husband and the fourth column the child. If it is read top-down, the first column is the husband, the second column the wife and the third column the child.

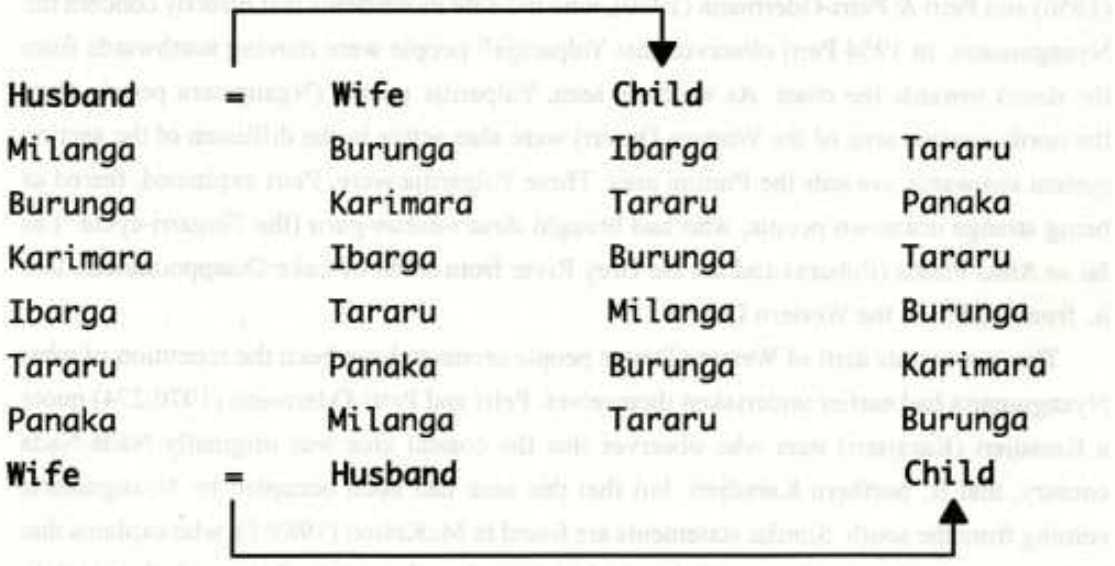


Figure 5: Marriage and filiation between sections at Laverton

Milanga marries either Burunga or Panaka, while Karimara marries either Burunga or Ibarga. Panaka marries either Milanga or Tararu, while Ibarga marries either Karimara or Tararu. Even if Milanga marries Panaka, and Karimara marries Ibarga, this puts into question the identities between Karimarra and Milanga, and between Panaka and Ibarga. Considering only marriage relations, Burunga and Panaka are identical, Burunga and Ibarga are identical, Milanga and Tararu are identical and Karimara and Tararu are identical (following the second premise, which says that if two sections marry one and the same third section they are identical). The solution to this problem is relatively simple. We need to look at filiation, notably at the relation between mother and child (Figure 6).

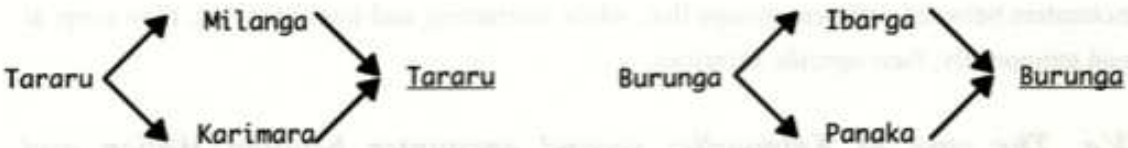


Figure 6: Mother-child relations in the Laverton system

The mother-child relation resolves itself into two principal cycles. The first one introduces the difference between Milanga and Karimara, the second one the difference between Ibarga and Panaka. Both cycles lead back to the starting section, whatever the intermediary section is, so that the cycles are completed. In order to show that it is justified to consider matri-filiation as determinant, I have added patri-filiation, which, as one can see, is far less cyclic and coherent (Figure 7).

Figure 7: Father-child relations in the Laverton system

We may, therefore, affirm that Burunga and Panaka, Burunga and Ibarga, Milanga and Tararu and Karimarra and Tararau are not, in spite of the marriage relations, identical. We may also affirm that, following matricycles, filiation of Tararu leads through Milanga or Karimara and filiation of Burunga leads through Ibarga or Panaka, and that we are, therefore, confronted with two real cycles, each of which has two variants—those variants being, in fact, the cycles of the two encountering groups. Matrifiliation shows that, in this case, Ibarga (Yiparrka) and Panaka, as well as Karimarra and Milanga, are mutually substitutable without changing matrilineal filiation. If we apply the identity, Karimarra = Milangka, to patrilineal filiation, we see that, according to the rules that if a child is Panaka, his father is Karimarra, and if a child is Yiparrka, his father is Milangka, here, too, Panaka and Yiparrka are identical.

This is an example of what I have called "relational identity". Panaka and Yiparrka are identical because of their identical relations to other sections, because of their structural position, but individuals from each of those two sections are not confused, and are not assimilated into one and the same section with two names. It seems to be a testimony for

encounters between different groups that, while interacting and intermarrying, they keep, at least temporarily, their specific identities.

IV.e. The case of Kalgoorlie: second encounter between Waljen and Mandjindja

Kalgoorlie, some 250 kilometres south of Laverton, offers another special case, another encounter between the systems of the Waljen and of the Mandjindja. At Kalgoorlie the same systems meet as in Laverton, but, although relations of marriage between the sections are identical to those of Laverton, filiation is quite different (Figure 8) (see Christensen 1981).

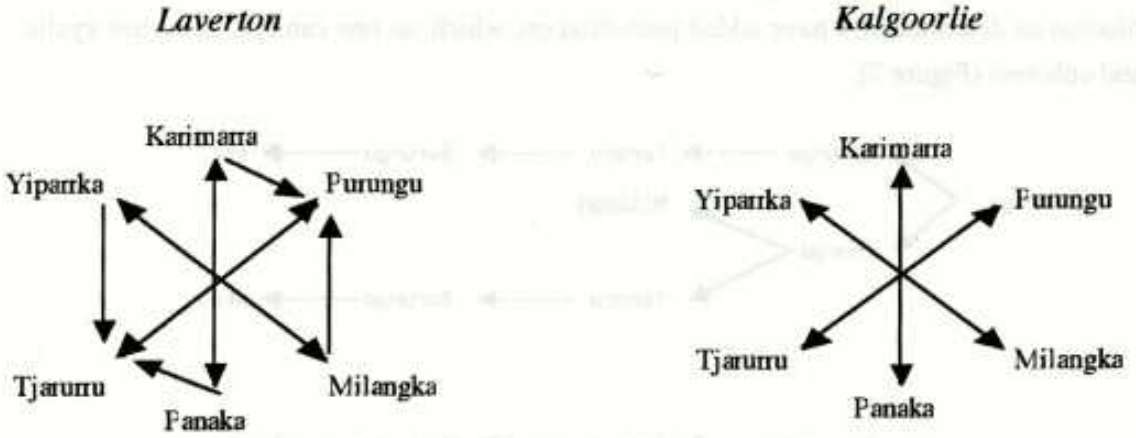


Figure 8: Sections at Laverton and Kalgoorlie (arrows represent father-child relations).

The system of patrifiliation at Laverton is complex and reveals little; indeed, we saw that it is matrifiliation that is coherent at Laverton. At Kalgoorlie, on the other hand, it is patrifiliation that is more coherent and cyclic. Kalgoorlie seems to be a diminished version of the Laverton system, in which "second choice" filiations, such as Panaka —> Tjarurru or Karimarra —> Purungu, have been suppressed, or have never appeared. Christensen (1981:251) confirms this phenomenon when he stresses that Kalgoorlie seems to deviate in that none of the six sections is considered directly equivalent to another one and that filiation is determined by the father.[37] In order to show that it is patrifiliation that is here more coherent and cyclic, I add a figure showing matrifiliation at Kalgoorlie (Figure 9):

[37] Usually, matrifilation is considered to be determinant. See, for example, Kupka (1975), McConnel (1930) and Elkin (1967:155, 1934:179). In irregular marriages, although it is often the mother's section that is taken into account to determine the section of the children, in Kalgoorlie it is usually the father's section that predominates (Christensen 1981:250).

Figure 9: Mother-child relations in Kalgoorlie

The example of Kalgoorlie is interesting because not only does it produce a different combination from that found in Laverton, despite identical bases, but also because it allows a hypothesis about the establishment of an assimilatory identity of sections, in contrast to the Laverton system where there is a relational identity. The following short illustration, however, must be taken as hypothetical, because it assumes a collapse of generations, which means that, at some stage, a man marries a person related to him as spouse but, at the same time, is structurally in the section of his mother-in-law.

I first examine mother-child relations where there are two cycles, as in every four-section system. The question that arises is how it comes about that there is a mother-child relationship between Purungu and Yiparrka, and between Karimarra and Milangka, although, further east, these sections are identical? Examining only these four sections, the relations are as follows:

If a child is Yiparrka, the mother is Panaka and the father Milangka
If a child is Panaka, the mother is Yiparrka and the father Karimarra
If a child is Karimarra, the mother is Milangka and the father Panaka
If a child is Milangka, the mother is Karimarra and the father Yiparrka

These relations in the Kalgoorlie system are represented in Figure 10:

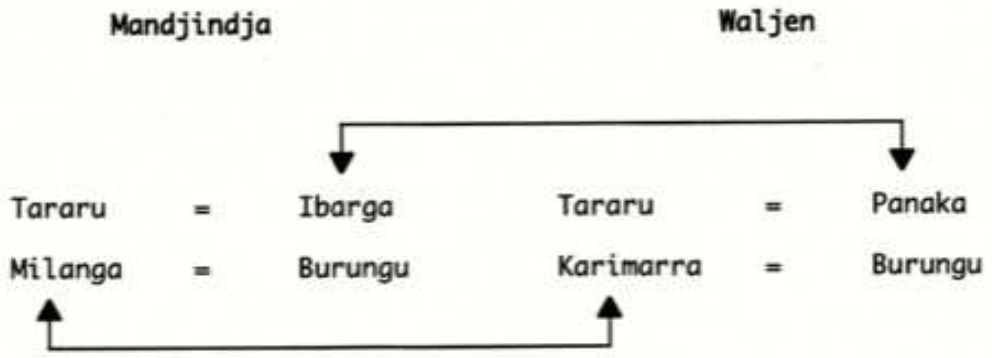
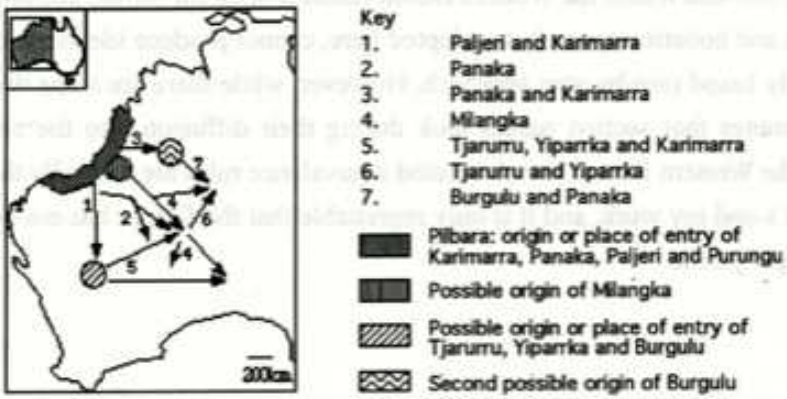


Figure 10: Kalgoorlie systems, comprising Mandjindja and Waljen (arrows are mother-child relations between the two systems)

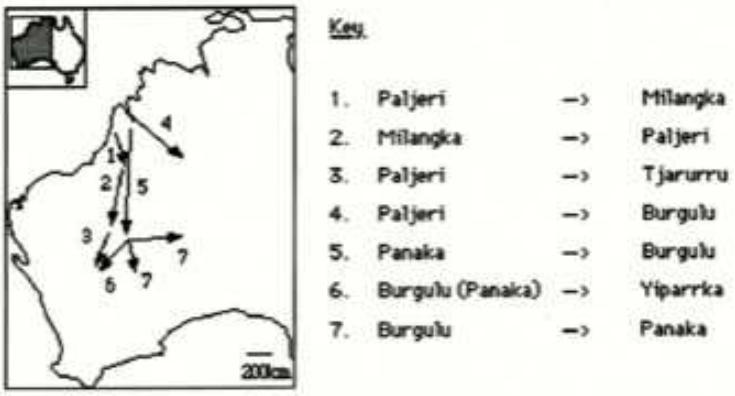
Thus, if it is this combined system that moved to the Ngaanyatjarra and Ngaatjatjarra area to the north-east, where Milangka and Karimarra are identical and marry Purungu, and where Panaka and Yiparrka are identical and marry Tjarurru, then, at some stage, mother and child must both have been in a single social category, that is, a Milangka child and its Karimarra mother must have been grouped into a Milangka / Karimarra section, and an Ibarga child and its Panaka mother must have been grouped into a Panaka / Yiparrka section. Faced with such complexities, one can only hope that further testimonies come up to elucidate the complex situation in Karlgoorlie, which, as far as I can see here, reveals a combination of section names and systems that indicate a cultural melting-pot situation, in which everyone, nevertheless, kept reference to his or her own original identity.

V. The diffusion of section names: an overview

The elements outlined throughout the previous three chapters are now sufficiently developed to allow a summary of the essential points on two maps. Map 12 shows the diffusion of section names themselves, that is, without substitution and independent of their combinations, excluding linguistic variations, which have been eliminated while defining the categories of sections. Map 13, complementary to Map 12, presents the substitutions between categories of sections. Properly speaking, this map cannot be considered to represent a diffusional pattern, but displays a set of substitution rules for section names (or categories) from one regional subset to another. It summarises what McConvell called pragmatic equivalence rules between sections.



Map 12: Routes of diffusion of sections without substitution into the Western Desert



Map 13: Rules of substitution (pragmatic equivalences) of sections in the Western Desert

Christensen proposed rules of substitution for sections in an appendix to his doctoral thesis (1981:368, annex 12). Some of the routes described here do not, however, correspond with what has been elaborated in his important study. The reason might be that Christensen describes substitutions from group to group, or from place to place, while I have been trying

to elaborate a general view of the entire Western Desert and approach it as a holistic system. The two approaches are, therefore, quite distinct.

Christensen suggests that Karimarra becomes Tjarurru when one moves from the Mardu to the Ngaatjatjarra, whereas my hypothesis is that Tjarurru came from the south-west and has been diffused in tandem with Karimarra. Christensen suggests that Karimarra becomes Burgulu when one moves from the Ngaatjatjarra to the Pintupi; I propose that Burgulu came to the Pintupi from the Yulbaridya area to the north-west, and that it was not necessary to replace Karimarra; rather, the Karimarra section is identical by assimilation with Milangka among the Ngaatjatjarra. Christensen suggests that Yiparrka becomes Panaka when one moves from the centre of the desert to the southern limit; I conclude that Yiparrka and Panaka had diffused in this region together. These divergences indicate that the problem of the diffusion of section names into and within the Western Desert remains open for further consideration. A reconstructionist and holistic approach, as adopted here, cannot produce identical results to a local or regionally based step-by-step approach. However, while there are some divergences concerning the routes that section names took during their diffusion into the central and eastern parts of the Western Desert, the elaborated equivalence rules are basically the same in both Christensen's and my work, and it is only regrettable that the former has not been made available to a larger public.

VI. Origin of section names and language or tribal names

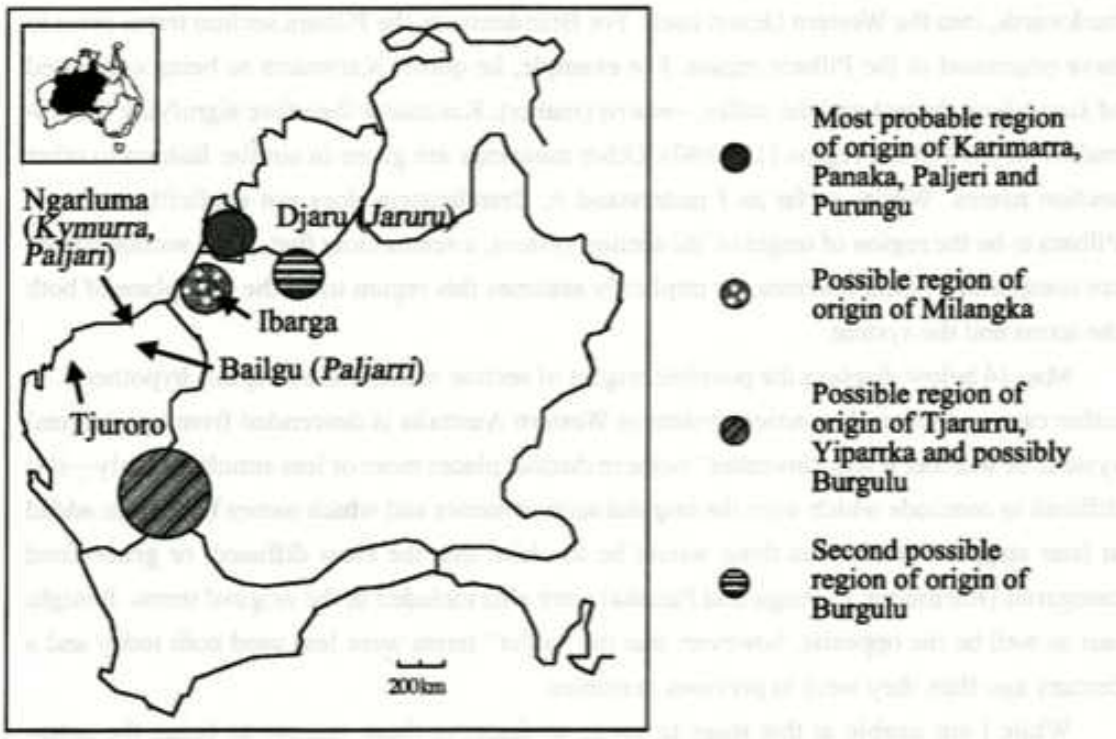
I have been assembling and discussing data in order to propose hypotheses about possible routes of diffusion and substitution of section names, and ultimately of the section system itself. However, I have only sporadically alluded to the question of the origin of the terms and the system. We have seen so far that there were two regions from which the section system penetrated the Western Desert. One is the Pilbara-Kimberley area which has as its principal terms Karimarra, Purungu, Panaka and Paljeri, and a further section Burgulu in the south-east of the Kimberleys. The other is situated in the South-West, whence Yiparrka and Tjarurru move eastwards. In between the two areas, the name Milangka appears at the latitude of the Nyangumarta and today's Mardu. While the South-West entry-point is congruent with McConvell's hypothesis on the possible origin of the section system in Western Australia, the terms that I conclude have come from this region, in particular Yiparrka and Tjarurru, are frequently replaced in the Western Desert by other terms, usually those penetrating the desert from the north-west.

The obvious hypothesis is to amalgamate the two regions (South-West and Pilbara) with the origin of the section system itself. While its "invention" may indeed have occurred in the South-West, it may well be that, after moving along the coast northwards, it diffused backwards, into the Western Desert itself. For Brandenstein, the Pilbara section terms seem to have originated in the Pilbara region. For example, he quotes Karimarra as being composed of *kari* (sharp, bitter) and the suffix, *–marra* (maker), Karimarra therefore signifying "sharp-maker" in the Pilbara region (1970:40). Other meanings are given in similar fashion to other section names. While, as far as I understand it, Brandenstein does not explicitly state the Pilbara to be the region of origin of the section system, it seems clear that, if the section names are composed of local lexemes, he implicitly assumes this region to be the birthplace of both the terms and the system.

Map 14 below displays the possible origins of section names following this hypothesis. In either case—whether the section system in Western Australia is descended from one original system, or whether it was "invented" twice in distinct places more or less simultaneously—it is difficult to conclude which were the original section names and which names have been added at later stages. The obvious thing would be to claim that the most diffused, or generalised categories (Karimarra, Purungu and Panaka) were also included in the original terms. It might just as well be the opposite, however: that the "older" terms were less used both today and a century ago than they were in previous centuries.

While I am unable at this stage to prove or disprove these regions as being the actual origin-places of the names or of the system, there are some interesting correlatives with other linguistic elements, in particular tribal or dialectal names. Tindale (1974:46), for example, claims that, among the Konejandi (Gooniyandi) in the Kimberleys, Purungu means "North". Section names, or at least phonetically similar words, are also used as language or tribal names. Reported examples are the Ibarga just east of the Njamal (Nyamal), whose name does at least look similar to the Yiparrka category. O'Grady (1964: map 1) locates the Yiparka

language just south of the Witakari, who are themselves just south of Nyangumarta. For the Ngarluma, Tindale (1974) again reports Kymurra and Paljari as being alternative tribal names, both of which having similarities with the categories Karimarra and Paltjarri. Other alternative appellations are Paljarri for the Bailgu (Palyku, Niabali); Jaruru, which is similar to Tjarurru, for the Djaru (Jaru); and, finally, Tjuroro (Jurruru) for the group just south of Yindibandji, which is also reported by O'Grady (1964) as being south of Roebourne. Hale, O'Grady & Wurm's map of *Aboriginal Languages of Australia* (1966) locates these same groups or languages as Ibargo and Tjuroro. The same was written earlier by Connelly (1932), who spelt these Ibargo and Choorere. Earlier again, Radcliffe-Brown (1912) described the Ibarga on the Oakover River, and the Churoro on the Hardley River from data he obtained during a trip in 1911. Brandenstein (1982:174) mentions Tjururu for the Tjuroro located on my Map 14, and explains that the term can be linked to *tjurru* "sun" and "day light". He also reports that one of his informants said the word alluded to "tjur" meaning "below". Tindale (1974) also wrote that Tjuroro meant "the people from the plains", and had to be put in relation to Kurama, meaning the "hill people", which is the name of the northern neighbours of the Tjuroro. Finally, Brandenstein (1970:44) mentions that the section name Ibarrga is also a tribal name.



Map 14: Hypotheses on the origin of section names

Can we really establish a link between tribal or linguistic names, section names and their places of origin? There is obviously a linguistic similitude between these tribal or language names and the section terminology, but are these terms actually cognates or do they simply and accidentally sound similar? Moreover, if these terms are cognates, what are the mechanisms

by which, and the reasons for which, a tribal or language name becomes a term inherent in, and diffusing with, a social category system? Hypotheses regarding such mechanisms had been advanced as early as 1899 by Mathew, in his *Eaglehawk and Crow*, who himself drew from McLennan's writings. Endeavouring to demonstrate the fallacy of Morgan's and Fison's ideas on group-marriage and on the origin of classes as a means to "remedy the bad results of incestuous marriage", he explains the following:

> I arrived at the view which Mr. McLennan takes, viz., that the matrimonial classes are memorials and results of the coalescence of different stocks of people, which were once distinct and exogamous tribes or races (1899:97).

This view has been implicitly promulgated by many anthropologists, up to and including Radcliffe-Brown and Lévi-Strauss, and becomes apparent when sections, or social categories in general, are linked to such corporate groups as clans or land-holding units. It is a short step from seeing sections as representing territorial entities to offering an historical explication of the combination of the various categories as being the result of the encounter of these various territorial entities (clans or tribes) with one another. We have, however, seen that sections are not corporate units. While it seems rather improbable that entire language-groups or tribes become exogamous and that each one's label provides the nomenclature for a social category, it could well be that the name of the language or tribe from which the section system was received by some other group had been used to relabel a social category. Such replacements of section names have been reported—such as when a name becomes taboo because of the death of a person who had the section name as a personal name (see Sharp 1998:26 for a Nyangumarta example)—but there is hardly any substance for making the point with regard to language and tribal names.

Problematic, also, is the geographic pattern of the language and tribal names compared to the diffusion of sections. Indeed, Ibarga is given by some authors as a language or tribal name, while none of the groups in this region uses the Yiparrka section category. The same is true for the Djaru: Tjarurru has not diffused so far north.

So far, the only plausible hypothesis regarding the origin of Tjarurru and Yiparrka is the South-West, whence they obviously entered the Western Desert, and which McConvell, as we have seen earlier, proposes as the origin of a section system itself. This, however, still leaves us with an open problem, which is that the Pintupi had the section Tjarurru in their old four-section system and it is not clear which way this section name could have arrived there from the South-West, as the groups in between only obtained the terminology at the beginning of the 20th century. Did the Pintupi replace their four-section system with the eight-subsection system only a few years after having incorporated the former?

Before concluding and discussing the implications of the diffusional pattern of sections, it is necessary to spend some time on another Western Desert category system: merged alternate

generational levels. Indeed, a reader not accustomed to the Western Desert might obtain the wrong impression: that all social category systems known in the central and eastern parts of the desert, at least, were diffused and recent borrowings from cultural systems or blocs foreign to the region. Generational moieties, however, are a much older feature of the social organisation in this part of Australia and, as some have claimed, much older than other types of social category systems in general, and even older than specific types of kin category classifications[38]. The distribution of the generational moiety systems reveals a different geographical pattern from that of the diffusion of the section system, but its discussion will enable me to elaborate an even more general picture than that obtained so far.

[38] Dumont (1966:238) claims that generational structure is older than a conception of kinship as a continual flow of generations.

VII. Distributional pattern of alternate generational moieties

Named generational moiety levels are known in many areas of Australia. Moreover, the recognition of such levels, whether named or not, is a structural feature of all Australian kinship systems, as they intrinsically underlie the kin-category system.[39] This characteristic was recognised by some of the earliest writers, among them Mathews (1903-04:61; see also Lawrence 1969[1937]), who presumably coined the expression "alternating generations" later adopted by Radcliffe-Brown (1930-31:443), albeit without acknowledgement.

It is safe to hypothesise that generational moieties or, as they are also called, merged alternate generational levels, have been known in the Western Desert for much longer than sections, because their distributional pattern is a much more even one, and because, as I mentioned in a previous chapter, sections were in their early phases of adoption by eastern groups applied in accordance with the generational level distinction only. All Western Desert groups know and use these moieties, and their terminological variation is far less important than among section names. This is, of course, a hypothesis based on the general assumption that common words among dialects are older—and point to the proto-language from which these dialects evolved—than words that are dialect-specific.

A further indication of the moieties' antiquity is their strong social functions. They have important external functions, similar to those described for sections, as the levels summarise kinship relations to a certain extent and, therefore, determine behavioural expectations. However, their full range of social importance emerges in contexts in which concrete matters, in both everyday and ritual life, have to be organised among persons who already interact on a regular basis. What are generational moieties?

Society, and in fact humanity, is divided into two sets of people. From an egocentric point of view, Ego and all his or her co-generationals, his or her grand-parents and all their co-generationals, and his or her grand-children and all their co-generationals belong to the first set or moiety, while Ego's parents and their co-generationals, as well as Ego's children and their co-generationals all belong to the second and opposite moiety.

Generation has, of course, nothing do to with age, but is a concept memorising a person's sequential position in the chain of filiation.[40] Ego's grand-children's children will be in Ego's parents' moiety, and the former's children in Ego's moiety, and so on, irrespective of their age.

Aboriginal people sometimes refer to persons of the same moiety as *mobs*, indicating a certain unity or identity. However, all dialectal groups of the Western Desert also have a specific absolute or relative nomenclature for each moiety. It is this unity or identity among people of

[39] An illustration of the intrinsic nature of these levels in the organisation of Australian (and all bifurcate-merging types of) systems is that when kin classification and terminology deviate from a strict concordance with the distinction of generational levels, a feature that is largely conceived as an exception, the pattern is described among scholars by the use of specific terminology such as *generation skewing*.

[40] See Testart (1995) for explanations on the distinction between age and generation.

the same generational level that, I believe, led Elkin and others to a misrepresentation of the Aluridja kinship system. From a sociological point of view, people of the same generational moiety consider one another as brothers and sisters, as opposed to their fathers and mothers and to their sons and daughters of the other moiety. This principle is extrapolated to the terminological usage. While a cross-cousin is always distinguished from a parallel-cousin, these cross-cousins can also be considered, and called, as if they were brothers and sisters; that is, they are co-generationals. I have elsewhere (2002a, 2003) termed the context in which distinct categories of kin are merged into sets that reflect the structure of generational moieties the *sociological context*. The context in which terminological usage accords with specific categories of kin I called *interrelational*. Here are two concrete examples taken from the Ngaatjatjarra terminology to illustrate this distinction:

Example 1:

- Any mother's brother is called *kamuru* in an interrelational context, as a mother's brother is of a distinct category from that of a father (*mama*).
- However, this same mother's brother may be called *mama* (father) in a sociological context, as all males one generation above that of Ego, are part of the identical social category (alternate generational moiety). Calling him *mama* does not make him a (classificatory) father, and certainly does not transform his children into siblings, but reflects an identity based on the opposition of generational moieties.

Example 2:

- Any male cross-cousin of a male Ego may be called *kurta* (brother) in a sociological context (he is a "generational brother"), but this does not make him a (classificatory) brother.
- This same person is called *watjira* (cross-cousin) in an interrelational context.

The structure defined by alternate generational levels penetrates deeply into everyday practice. Expectations for distribution of goods in accordance with social rules and norms are stronger between persons of opposite moieties, where the relationship always includes at least some restraint or even avoidance. The unity or identity between persons of the same moiety, on the other hand, leads to behaviour that does not usually reflect relations of hierarchy or of opposition, but rather of reciprocity and identity. Laughren (1982:77) reports for the Warlpiri that "men's sporting teams were traditionally formed according to this division". Tonkinson (1991:75-76) notes for the Mardu that the alternate generational divisions are also important in ceremonial activities, where "the two groups sit a short distance apart, and throughout the proceedings their members joust verbally with each other in loud and light-hearted fashion". Stanton (1984:168) similarly explains for the Mt. Margaret area that it "is the division of alternating generation levels which is of greatest significance in ritual activities" (see also Laughren 1982). As the Berndts formulated it:

> Within a person's own generation level are to be found, to some extent at least, 'equals': brothers and sisters, cross-cousins, age-mates and so on. The generation level above him includes those with some authority over him, directly or indirectly: father, mother, father's sister, father's sister's husband, mother's brother, mother's brother's wife, perhaps mother-in-law, father-in-law and so on. Deference, and in some cases avoidance, are relevant here (Berndt & Berndt 1992:87).

Many Australian languages include elements that reflect the opposition between generation levels, and the reciprocity or identity between people of the same level, although I do not believe this to be the case in the Western Desert. Dench (1987) observes this fact in the Ngayarda languages of the Pilbara, Laughren (1982) for the Warlpiri of the Central Deserts, Alpher (1982) for the Dalabon language in Arnhem Land, and so on (see also Hale 1966). Usually, it seems, some specific pronominal form indicates whether the person referred to is of the same or opposite moiety, or if an action involves persons of distinct generational moieties.

One could go on illustrating the importance of generational level divisions in the linguistic, kinship, everyday and religious domains of Aboriginal Australia.[41] However, what is of interest here is the terminology used in relation to these social categories. Following are two tables and two maps displaying alternate generational level terminologies used in the Western Desert. The distributional pattern of the nomenclature is far more regular than was the case with section names. Let me briefly explain why two types of nomenclatures are distinguished in these tables and maps.

Generational moieties are sociocentric units as defined by Service (1960). However, unlike sections, the terminology applied to these moieties is of two sorts: relative and absolute. An absolute term for a generational moiety is independent of the speaker, that is, a person belongs to a moiety named X, independently of the person to whom he or she is speaking or referring. A person's classification into a specific moiety does not alter with the speaker. This was also the case with section terms.

Far more widespread, however, are relative terms for generational moieties. A relative terminology could also be called an "egocentric terminology", because a moiety's name depends on who is the speaking Ego. However, as the word "egocentric" might create confusion with the notion of sociocentric as used above and as defined by Service, I prefer the use of the expression "relative". Let me use the example of a father-son relationship to explain how a relative moiety terminology is applied. Father and son are not in the same generational moiety. The son's moiety name is A, say, and the father's moiety name is B. This would indeed be the case in an absolute terminology. In a relative terminology, however, the son is B to his father, and the father is B to his son, while each one considers himself to be A. The terminology depends on the speaker. The son says, "I am A, and my father is B", while the father states, "I am A and my son is B". The semantic values of the words A and B are therefore something like "I and those like me" for A, and "the other and those like him"

[41] See White (1981) for more information and references.

for B. The relative terminology underlines the binary character of generational moieties. In fact, all that this terminology expresses is precisely an opposition. Hale's (1966) definition of harmonic and disharmonic characters in Australian kin relations appropriately reflects this feature:

> A person will be said to be *harmonic* with respect to those of his kinsmen who belong to the same set of alternate generation levels as he; he will be said to be *disharmonic* with respect to all others of his kinsmen (Hale 1966:319; emphasis in original).[42]

The most widely used relative and absolute terms for generational moieties in the Western Desert are shown in Table 5. Other terms and spellings are reproduced in Table 6 and Table 7.

Relative terms for generational moieties		
Term	nganantarka	tjanamiltyan
English gloss	us, we bone, we group	them, they flesh, they group

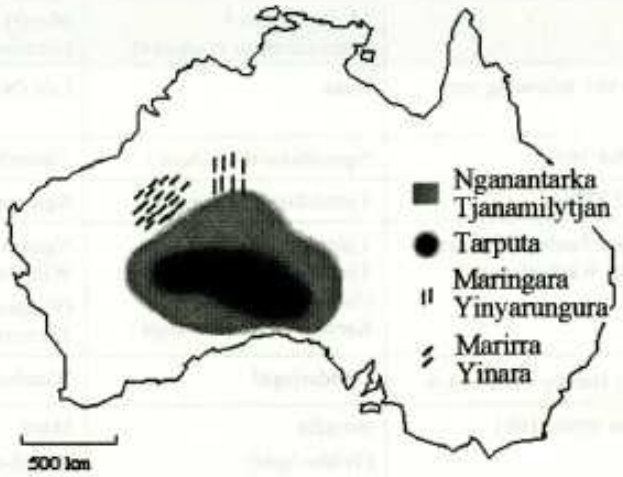
Absolute terms for generational moieties		
Term	Tjintultukultul	Ngumpaluru
English gloss	Sun-side	Shade-side

Table 5: Alternate generational terminology

Group / source	Own moiety as in source	Other moiety as in source
Antakarinja Tindale 1965ms:48	Nganandarka	Jianamiltjan
Kokatha (SA) Tindale (1965ms:45)	Nganantarka	Tarbula / Tanamiltjan
Kukatja (Balgo) White (198, following pers. comm. Peile)	Maringara	Yinyarungura
Mardu (Jigalong) Tonkinson (1991)	Marira	Jinara (Yinara)
Mt Margaret Stanton (1984:168-9)	Nganatarka	Tarputa
Ngaatjatjarra Gould (1969b:106)	Nganatarka	Inyurpa / Tarputa
Ngalea (Nullarbor Plain) Tindale (1965ms:31)	Nganandaraka	Tjanamiltjan (Tarbudu)
Pindiini / Wonggai Tindale (1965ms:70)	Nganatarka	Tanaamiltjan
Pintupi Myers (1986)	Nganarnitja	Yinyurrpa
Pitjantjatjara Goddard (1992), Elkin (1938-40:213) & White (1981) for Yalata	Nganantarka	Tjanamilytjan
Tjalkadjara (north of Laverton) Tindale (1965ms:91)	Nganataruka	Tjanamiltjan
Yankunytjatjara Goddard (1985)	Nganantarka	Tjanamilytjan

Table 6: Relative nomenclatures for generational moieties

[42] See also Wierzbicka 1986.



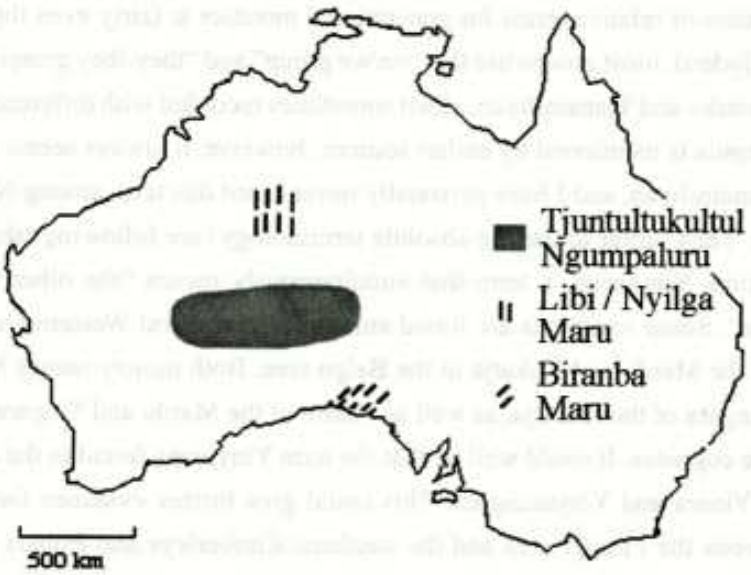
Note to Map 15: Where Tarputa is used, Tjanamilytjan is used as well.

Map 15: Distribution of relative terms for generational moieties

The distribution of relative terms for generational moieties is fairly even throughout the Western Desert. Indeed, most groups use the "we/we group" and "they/they group" gloss in the forms of Nganantarka and Tjanamiltyan, albeit sometimes recorded with different spellings or local usages. Tarputa is mentioned by earlier sources; however, it always seems to work as a synonym for Tjanamiltyan, and I have personally never heard this term among Ngaatjatjarra-speaking people. They prefer to use the absolute terminology (see following table and map), with one exception, Yinyurrpa, a term that simultaneously means "the other moiety" and "wrong marriage". Some variations are found among the peripheral Western Desert dialects such as those of the Mardu and Kukatja in the Balgo area. Both moiety names Marira of the Mardu and Maringara of the Kukatja, as well as Yinara of the Mardu and Yinyarungura of the Kukatja could be cognates. It could well be that the term Yinyurrpa found in the central areas is a cognate of Yinara and Yinyarungura. This could give further evidence for the cultural connection between the Pintupi area and the southern Kimberleys and Pilbara. Let us now consider the distribution of the absolute nomenclature for the generational moieties.

Group / source	**Moiety name 1** (*translation as in source*)	**Moiety name 2** (*translation as in source*)
Kukatja (Balgo) White 1981 following pers comm Peile	Maru	Libi (Nyilga)
Mt Margaret Stanton 1984:169	Ngumpulurutja (*Shade*)	Tjinturltawakulpa (*Sun*)
Ngaanyatjarra Douglas 1977a	Tjirntulukultu (*Sunside*)	Ngumpalurru (*Shadeside*)
Ngaatjatjarra Dousset and Tindale 1963ms:39 (Tindale: identical terms in Warburton and Laverton)	Tjintultukultul / Tjindulakalanguru (*Sun side, sections Karimarra and Purungu*)	Ngumpaluru / Wiltjalanguru (*Shadeside, sections Tjarurru and Panaka*)
Pitjantjatjara (at Uluru) Harney[1] 1960:63-4	Djindarlagul	Wumbularu
Pitjantjatjara (at Yalata) White 1981	Biranba (*White-light*)	Maru (*Black-dark*)
Wiluna Sackett 1978. Mainly Mandjildjara people	Djirndulu (*Sunside*)	Ngumbaluru (*Shadeside*)

Table 7: Absolute nomenclature for generational moieties



Note to Map 16: Djindarlagul and Djirndulu are identical to Tjintulkultul. Wumbularu is most probably identical to Ngumpaluru.

Map 16: Distribution of absolute terms for generational moieties

Unlike the relative terminology, the absolute nomenclature is rather localised. Two general forms are reported. The first pair, Tjntultukultul and Ngumpaluru, is distributed throughout a central belt from the Northern Territory/Western Australia border to approximately Wiluna in the west. It could well be that the regular use of this absolute terminology has spread westwards with the migration of Ngaatjatjarra and Ngaanyatjarra-speaking people towards Mt. Margaret and Wiluna in the early 1960s. The second pair is Biranba and Maru, as reported

by White for Pitjantjatjara people living at Yalata. Maru derives from black and is a synonym for shadeside (Ngumpaluru). This word is also found in the third form, among Kukatja-speaking people around Balgo.

Generally speaking, relative nomenclatures are more widespread, although they are not often used among dialects close to the Northern Territory/Western Australia border. In this nomenclature, the binary opposition between the "us" and "them" is stressed, underlining the principles of divergent identities I mentioned earlier that govern the relationship between the moieties. In the absolute nomenclature, a moiety is unambiguously named and linked to the section terminology as well. This nomenclature not only stresses the distinction between people of opposite moieties, but also places them definitely inside the space of kinship and ritual behaviour. Indeed, Tjintultukultul ("sun side") persons sit on the eastern parts of the ceremonial ground, where the sun rises, while the "Ngumpaluru mob" ("shade side") sit on the west.[43]

This chapter has shown that the section system is only one, and not even the most important, social category system in the Western Desert. It has presented the geographic distribution of the two types of nomenclatures found for generational moieties, an absolute and a relative terminology, both of which reflect some regional or local variations, especially on the desert's fringes. The chapter has not tried to establish relationships between terminologies used inside and on the borders of the desert. However, it is well known that named generational moiety divisions are used in many parts of Australia, and certainly in languages surrounding the Western Desert. Examples, among many others, are the Warlpiri in the north-east of the Western Desert, using *nganarntarrka* and *jarnamiljarnpa* (Laughren 1982:77), words that are definitely cognates of the relative terminology mentioned for the Western Desert above, or the Kalamaia in the south-west who have both, a relative and an absolute nomenclature for generational moieties (Bates, quoted in White 1981; Douglas 1968).[44]

The section system has diffused as an overlay on the generational distinctions, and being compatible with the general pattern of kin categories according to the bifurcate-merging principle, it has easily embedded itself in the social landscape. However, in certain contexts, generational moieties allow for a use of the kinship terminology that does not follow the Dravidian type of cross-parallel distinction, but amalgamates co-generationals into categories determined by those classes usually applied within the nuclear family only, excluding affinal and cross-relations. This feature is simultaneously a reason for the misinterpretation and the misrepresentation of the Western Desert or Aluridja-type of kinship system in former times, and underlines the importance of the generational level divisions in structuring social space as well as behavioural patterns.

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[43] Such is the case among Ngaatjatjarra people and Ngaanyatjarra people (see also Glass 1993:29). Lee Sackett (pers. comm.), reports for the Wiluna area that sun side people sit to the north, while shade side people sit to the south.

[44] These are Beerungoomat and Jooamat for the absolute, and *pirninjku* and *tjuwak* for the relative terminology.

VIII. Why and how did sections diffuse? A network approach

This study has illustrated so far some scenarios that we can consider reasonably probable, and others that are highly hypothetical. In this chapter, I will summarise these scenarios to correlate them with other findings, linguistic, anthropological and archaeological. The two questions on which I will elaborate are: how did sections diffuse or come to be adopted and why? I will first contemplate some explanations of the social mechanisms through which a section system is adopted. Then, I will illustrate the reasons for diffusion and adoption of such a system, which are particularly intriguing when we know that many Western Desert groups do not make intensive use of these devices in everyday interaction, and do not use sections as personal names or terms of address and reference (see Dousset 1997). The findings on section diffusion will be linked to the distributional pattern of alternate generational moieties, and, albeit briefly, contextualised within archaeological material. I will elaborate a scenario that, to some extent, grows out of the routes of diffusion proposed in Chapter V above.

VIII.a How did sections diffuse, how were they adopted?

In an as yet unpublished paper, Brooks (1999) poses important questions we need to address here as well:

> Questions about the process of adaptation between neighbouring section systems lead necessarily into broader considerations about sections per se; for example, how are sections acquired, what do they mean to those who use them, and what are the functions and implications of having such systems?

The author recalls Hamilton's (1979) argument regarding the transmission of sections through ritual exchange, and explains that "there was a particular need at a more general level for a common frame of reference through which Aboriginal people in and around the Laverton area could relate to one another" (Brooks 1999). The inherent diffusionist capacity of the section system itself, linked to its ability to regulate behaviour between "foreigners", including within ritual exchange, has been underlined early on in this study. Brooks and Hamilton both confirm that the new contexts and contacts that flow from settlement or concentration in stations, missions and towns by groups whose traditional countries were often in distant localities facilitated the adoption of the general framework for behaviour that section systems propose. Without the necessity for pre-existing relationships, these new co-residents were capable, through the adoption of the section system, of generating first approximations of one another's behavioural and social expectations. However, Hamilton (1979:348ff), especially, emphasises that the rapid diffusion of the system was a response to this new context, that is, the emergence of Western infrastructures.

> It seems clear that the wide diffusion of these patterns was in part a direct outcome of white contact. As Aborigines moved towards the centres of white settlement they set in train social relations which were presumably much more intense than had ever existed before. As groups met and mingled, they exchanged ceremonies and women … Groups which lacked the structural articulations of those who gave ceremonies were motivated to grasp them, and to perpetuate this through time by adopting the appropriate marriage practices which would permit the continuation of these ritual links … However sections and subsections were obviously part of the scene in many parts of Australia before colonisation (Hamilton 1979:356).

While the speed of the section system's diffusion since colonisation of the Western Desert area is without doubt the consequence of concentration and new means of communication and transportation, I have also mentioned that the necessary networks through which such diffusion occurred had previously existed, and that diffusion of the section system is an historical element that does, in certain regions, precede colonisation (see also Berndt 1941). This argument and, more importantly, the existence of networks will be further developed below. Another point worth mentioning is that Hamilton is insinuating in the above quote that marriage rules were subsequently adapted to the section system. This point has no direct bearing on the present study; nevertheless, I feel it necessary to emphasise that I do not believe this to have been the case in the Western Desert, where determination of the spouse category was compatible with the section system well before its adoption (see Dousset 2002a, 2003).

The benefits of adopting the section system have been explained in more than one place. I have not yet, however, considered the concrete mechanisms through which sections progress from one group to another and how they are incorporated into social practices. The context of such a progression must obviously be one of contact, either "traditional" through the established social and economic networks, or partially an "innovation" as a consequence of concentrations of groups within new communities. The consequence of such diffusions is, obviously again, the capacity of two groups to apprehend each other's relationships by way of section classification, whether this is done through the adoption of the system as is, or whether some structural transformation and rearrangement has been undertaken. The social consequences are largely identical.

What does, however, happen "in-between"? It is highly improbable that an entire group instantly adopted the section system as a whole, that every person within a language group or larger residential community knew at once in which section she or he belonged. Adoption of the section system must be apprehended as a process, in which only some persons of a community are classified in the first stage, following which, in the second step, the classification is extrapolated to others and eventually to all members of a community. That adoption and integration of the section system was, indeed, a process with some duration has been illustrated earlier, when I discussed the arrangements and rearrangements that occurred in and north of the Mt. Davies area.

Two scenarios illustrating the "in-between" are imaginable. These can be summarised under the notions "arbitrary" for one, and "extensionist" for the other. Both probably occurred simultaneously, although there are more reasons to believe in the prevalence of the "exensionist" over the "arbitrary" scenario. The "arbitrary" scenario is adopted by Brooks and was mentioned by others. The attribute, "arbitrary", does not imply that the scenario or theory itself is arbitrary, of course, but that the way sections were attributed during the "in-between" is to some extent subjective or, as Brooks (1999) calls it, idiosyncratic. This scenario does not necessitate, strictly speaking, the existence of networks and relations between groups. With respect to the "arbitrary" scenario, it is worth quoting Brooks at length:

> In spite of the highly formalized and structured accounts of matters relating to sections that appear in most of the literature by Elkin, the Berndts, Christensen and other writers on the subject, it is of interest to note the widespread appearance (albeit in much smaller quantities) of a rather different sort of material. The Berndts, for instance, writing about Ooldea, where social organization is 'still dominated by the alternate generation lines' and un-correlated with the section system, point out that section terms may be assigned to individuals purely on the basis of physical appearance ... When two groups come into contact, 'those who have no section name...are placed in a row and named by their tribal "boss" according to their [physical] appearance'.[45]

Brooks claims that he has, "even in the late 1990s, come across similar statements associating particular section categories with such physical qualities". I will not detail further reports of such mechanisms, but just add that this approach is cognate to Brandenstein's theory on the substances of sections mentioned earlier, which claimed that the structural rules inherent in the system were reflecting principles of the inheritance of human humours. Similar comments were advanced by Gould (1969b:199) for generational moieties; he claimed that "the naming of 'sun' and 'shade' divisions by the Gibson Desert Aborigines is probably related in some way to the divisions 'light-blooded'-'dark-blooded' ... and light- and dark-complexion, reported among Aboriginal societies from the eastern states of Australia and in the South Australian desert". Sackett (2001) also explains that some of the Cosmo Newberry native title claimants say that the two generational moieties are associated with physical characteristics such as "people with fair skins" for one, and "people with dark skins" for the other.

It may well have been that, in a very first step, sections were attributed to some people according to physical appearances, and I do not say that Aboriginal people do not equate social categories with physical or mental characteristics. What is at stake is whether such emic theories were determinant in the attribution of section names to an entire community. It seems evident that other members of a community were given sections in accordance with their well-established kin relationships with others. If first contact with the system *could* have led to the classification of individuals following "arbitrary" mechanisms, these could have been

[45] Quotes within this quote are from Berndt & Berndt 1942-45:154.

applied only to a very few members of the community, or only to the very first generation and corrected in the following generations. If this were not the case, then we would still encounter today a significant number of irregular marriages if judged against the section system.[46]

This leads to the "extensionist" scenario. The majority of Australian Aboriginal kinship systems have two particular features. One has been labelled by Radcliffe-Brown (1930-31:44) the "non-limitation of range"; the other is the underlying Dravidian bifurcate-merging pattern, whatever other overlying principles are locally at work. Non-limitation of range simply means, as Tonkinson (1991:75) writes for the Western Desert, that "the moral universe of the Mardu is populated solely with relatives"; and, as Testart (1985:208) terms it, the system of kinship is "total", embracing the entire society. Because kin categories were, and in many parts of the continent still are, the principal mechanism through which particular and normative interrelational behaviour is determined in a first approach, every person with whom such interaction is expected to take place needs to be situated within the kinship system. Human interaction is framed by a range of culturally appropriate behaviours linked to, or defined through, a limited number of kin categories or kin types. The mechanisms by which kin categories are extended from the nuclear or extended family towards the entire society, and in principle to human kind in general, are inherent in the second feature of Australian kinship systems, the Dravidian bifurcate-merging pattern.

A short summary of the principal characteristics of such a system will have to suffice. Bifurcate-merging means that one's mother's brother is distinguished from one's father and father's brother, and that one's father's sister is distinguished from one's mother and mother's sister. On the other hand, one's father and father's brother are both fathers, and one's mother and mother's sister are both mothers. It follows that one's mother's sister's and one's father's brother's children are siblings, while one's mother's brother's and one's father's sister's children are cousins, or indeed cross-cousins. Only people of the cross-cousin category are classificatory spouses; and only people of the mother's brother and father's sister categories are classificatory parents-in-law. These principles are extrapolated throughout the genealogical grid and beyond, vertically (ascendants and descendants) and horizontally (collaterals and affines). The "Dravidian" in the appellation used above simply suggests that the same principles are at work in every generation: one's mother's mother and one's mother's mother's sister are both mother's mothers, and one's mother's mother's sister's daughter is consequently a mother as well.[47]

The Dravidian bifurcate-merging principle combined with the feature of non-limitation of range has an important consequence. The system itself stores some aspects of social history. It is sufficient that there has been at some time past some sort of connection (a marriage, for example) between "foreigners", for all their descendants, as well as their co-residents and *their* descendants, to be able to "calculate" the relationship in which they stand to one another. This

[46] Among Ngaatjatjarra-speaking people, however, irregular marriages count for less than 3 per cent of all marriages.

[47] Tjon Sie Fat (1998:70, figure 3-4) summarises the relationships and kin categories of a Dravidian type of bifurcate-merging system.

is not a theoretical deduction or induction, but reflects ethnographic observations that most scholars, and other persons involved in so-called Aboriginal affairs, would confirm. Dravidian bifurcate-merging systems memorise types of relationships between people without the need for knowledge of an extensive genealogical pattern.

Because every member in a community already stands in a specific relationship to all others, it is improbable that all those relationships would be reformulated in order to agree with a section system that was supposedly attributed with reference to physical characteristics. At least among the Ngaatjatjarra, for whom I do have genealogical material pre- and post-dating the arrival of sections, such gigantesque rearrangements were certainly not undertaken.

The particularities of the Dravidian bifurcate-merging system have implications that reach beyond the specific context of section attribution. Provided we demonstrate the existence of the networks alluded to above, we can reasonably believe that there must have been intermarriages between neighbouring groups with economic and ritual interconnections one of which at some stage transmitted the section system to the other. If inter-group marriages pre-existed the arrival of sections, then one can expect that, eventually, sections were, at least in some cases, attributed in such a way as to conform to the relationships that had risen from these marriages. It might well have taken some time to understand the system and fit it to actual relationships, but it would not have been an arbitrary process throughout.

VIII.b Why were sections adopted; why have they diffused?

The two questions of this subtitle seem identical, but in fact relate to distinct aspects of the diffusion of systems of social classification. I have already largely answered the first part of this question and will limit the description here to a general summary. This interrogation addresses the reason or intent behind the adoption of sections. The second part of the question, on the other hand, interrogates the nature of the vehicle that transports them.

We have seen that sections' primary functions are external, not internal. We must recognise, however, that delimiting what is internal and what is external in a Western Desert group is a difficult qualification. We may simply state that sections are convenient social labels and propose global categories for ranges of behaviour that are especially useful in inter-tribal, inter-group and inter-language gatherings and communication. I have quoted authors such as Strehlow and Service to give weight to this aspect of diffusion. Another example is Glowczewski's (1989:247 & 1991:283-284) explanation of how Warlpiri people from Lajamanu and Yuendumu were invited to Docker River in 1984 to bring the Kajirri Law to Pitjantjatjara country with the aim, among others, of introducing the subsection naming system. Glowczewski writes (1989:247) that these labelling devices "represent some sort of dominant Aboriginal ideology, facilitating intertribal relations as well as interactions with White people at the same time".

From this assessment it follows that sections have an inherent diffusional capacity. If they are particularly convenient in contexts of contact, then one can suppose that contact is indeed their vehicle for diffusion. Such contacts were either traditional—based on networks linking

neighbouring groups for ceremonial, economic and marital exchanges and relations—or they were "new", resulting from colonisation's and settlement's increasing effect on inter-group relations and modes of communication. In every case, sections are a *lingua franca* of kinship, which in turn proposes a formal framework for interaction among humans. I am not suggesting here that kinship is the only framework for such interaction, nor do I imply that there are no subjectively evaluated and experienced relationships that transgress the formal rigidity of the kinship system (Dousset 2005). I am only emphasising that the kinship and section systems provide first and handy guides in conceptualising and formalising such relationships. The diffusion routes of sections proposed earlier should, therefore, follow identical or similar paths to those established by social networks.

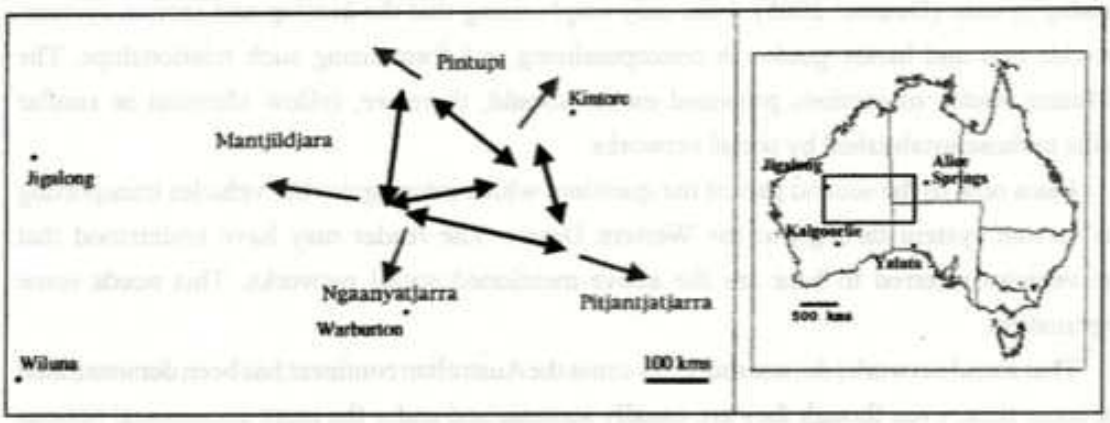
I turn now to the second part of the question, which interrogates the vehicles transporting the section system throughout the Western Desert. The reader may have understood that the vehicles referred to here are the above-mentioned social networks. This needs some explanation.

That social networks do, and did, criss-cross the Australian continent has been demonstrated for some time, even though they are usually summarised under the more economical notions of trade or exchange routes (e.g. Davidson 1935; McCarthy 1939-40, 1963). Micha (1970) has probably discussed the available literature most exhaustively, and has presented the most encompassing picture. This author shows that "inter-tribal trade" played an important role in cultural change before European settlement, and that trade routes are simultaneously ways through which material and immaterial cultural elements diffuse, besides overlapping with the tracks associated with Dreaming beings. Micha's general conclusions are not convincing overall, but the ethnographic material he summarises for demonstrating the importance of networks is impressive. He sees behind such extensive routes a causal relationship between totemic solidarities (that is, between persons of identical totem but distinct tribal groupings), inter-group initiations, exchange and diffusion. To make of totemism the engine of cultural diffusion is rather problematic, and it is more probable that these networks or routes go hand in hand with mutual initiations, inter-marriages, exchange and henceforth diffusion of cultural features. If culture is about sharing common symbols (and material elements), then these routes demonstrate that Aboriginal culture, and certainly that of the people of the Western Desert, is about *actively* sharing these symbols.

This overlap of trade, Dreaming tracks and routes of cultural diffusion is a good enough reason to call these various routes, and the network they constitute, *exchange systems*. Despite the necessity and importance of seeing diffusion and routes of trade as integrated systems of exchange, I will, for the sake of clarity, maintain the distinctions whenever possible, but urge the reader to interpret these as analytical and not ethnographic distinctions.

We need to become more specific now and illustrate these "trade-routes" and "Dreaming-tracks". Mulvaney (1976:77) distinguishes between "short-distance, intragroup meetings and exchanges, and long-distance, intergroup activities". Hereafter, I will largely concentrate on long-distance intergroup activities. If we take the example of the Ngaatjatjarra "internal" and short-distance groupings, we see that the networks criss-cross one another at a micro-level

while featuring significant openings towards the outside world. Map 17 illustrates the principal networks within the Ngaatjatjarra dialectal group (black arrows), and the connections towards other groups (grey arrows). The highly schematised arrows summarise traditionally employed routes of travelling as well as the circulation of people for marriage between regional sub-groups.



Map 17: Ngaatjatjarra internal networks

As such, the entire "Ngaatjatjarra network" can be considered a single point within the larger web linking them to the Pintupi to the north and west, the Mandildjara in the west, the Pitjantjatjarra in the south-east and the Ngaanyatjarra in the south-west.[48] This larger network reflects the diffusion routes of section names that I have been illustrating so far, but they also link to archaeological findings concerning the diffusion of material culture, as well as to matters relating to Dreaming tracks.

To my knowledge, archaeologists have not yet been able to draw actual routes of cultural diffusion for the Western Desert. However, they have, without doubt, demonstrated the principles for such routes, and argued the necessity for them to exist. Gould is, in this respect, the most quoted researcher, although others have also argued in similar terms. In *Living Archaeology* (1980), Gould discusses his findings from Tika Tika (north of Warburton), where he undertook research with a contemporary Aboriginal group in 1966 and 1967, and Puntutjarpa, an archaeological site in the Warburton Ranges, and examines the material culture in comparison with that of other sites, such as James Range East in Central Australia. Gould's principal aim is to promote the utility of an ethno-archaeological approach that uses "anomalies", rather than the more traditional analogical approach in ethno-archaeology. He studies unexpected material and behaviour, such as the presence of tools made from exotic, that is non-local, material, and explains these as being the signature of what he calls the "risk-minimizing mode of hunter-gatherer adaptation" (e.g. Gould 1980:137). Among other factors, this risk-minimising mode articulates the necessity for social networks to exist and be

[48] Incidentally, this schematised internal network with its outwards doors corresponds well with Birdsell's model for local group contacts (1958:197; see also Peterson 1976).

maintained. Those "exotic" materials provide proof for the existence of extensive networks through which goods circulate.

The unpredictability—in space and time—of rainfall in what Gould elsewhere (1969a:273) calls "the harshest physical environment on earth ever inhabited by man before the Industrial Revolution" is a factor necessitating a fluid and adaptive social structure. Such a structure has been widely reported (e.g. Tonkinson 1991; Myers 1986), and involves what could be called a non-dogmatic mode of land affiliation and ownership. Prolonged co-residence, for example, can, in the Western Desert, give rights to land just as birth (or descent) does. Moreover, affiliation to land does not automatically involve the right to exclude others from accessing its resources. Furthermore, exogamy, that is, the need or obligation to marry outside the local community, is a strong characteristic in the Western Desert, as marriage creates mutual rights of access to resources as well as solidarity between in-laws.

That such networks existed in the past as well as in recent times is testified to by archaeologists' and anthropologists' findings of exotic material, that is, material that could only have arrived at a specific location through trade. One example quoted by Gould (1980:141ff) concerns Kimberley points found among Central Australian groups, which could only have arrived there by trade. After discussing ethnographic evidence for such exotic material at Puntutjarpa, Gould writes, not without some irony:

> Unless one wishes to indulge in fantasies such as imagining thousands of stone tools and flakes with tiny feet migrating on their own across the countryside ... one must accept the premise that the presence of exotic lithic materials ... is circumstantial evidence of social networks along which such materials flowed (Gould 1980:156).

Other reports and studies concerning the circulation of goods throughout the desert were made by Mountford and Harvey (1938), who proposed a general north-south route from the Kimberleys to the Great Australian Bight in the south, and by Akerman (1973), who depicted the circulation of shells among settlements from the Pilbara and Central Australia into the Western Desert (see Map 18 below).[49]

The evidence discussed so far shows that material and immaterial goods must have spread through the Western Desert. We may also claim with reasonable confidence that these goods predominantly came from the Kimberley and Pilbara regions, and we can see that this fact accords well with the proposition that the section system, or at least one of them, entered the Western Desert from the same area. However, we have little evidence for detailed routes of diffusion and trade. With the exception of Akerman's (1973) report on the trade of shells, no other study I know of depicts actual topographic paths.

[49] More evidence for, and examples of, extensive trade routes throughout Australia can be found in McCarthy (1939-40); Mulvaney (1976); Davidson (1935); Akerman & Stanton (1994).

Here we may turn to the "Dreaming-tracks" mentioned earlier and state, with Micha (1970:290), McCarthy (1939-40:104), Petri (1950:52), Berndt (1941:6,19) and others, that these tracks may well be following trade routes, and are, therefore, also the likely paths involved in culture contact and diffusion. For Ooldea and the Victoria Desert, Berndt (1941:6) explains that "a study of the myths of the Western Desert aborigines will throw light on these [pre-contact] migrations as well as on culture diffusion in the area". The reasons why Dreaming tracks are likely to overlap with trade routes and routes of cultural diffusion are evident. Ritual activities take place at specified locations along these Dreaming tracks, and, as Myers (1986:173) writes: "If anything, the ritual life is even more devoted to formal exchange than is daily life. The exchange of sacred objects between men makes the principle into a goal itself". Religious exchange, explains Kolig (1981:109ff) for the Kimberleys, has impressive traditional precedents, although modern means of communication and transportation have significantly increased the speed and extent of these social networks. Moreover, ritual knowledge itself is a "traded" good, as groups exchange this knowledge with neighbouring and distant communities to such an extent that the notion of "nomadic rituals" has been used (Poirier 1992). Additionally, many of the significant sites of Dreaming tracks are located in the proximity of rock holes or other sources of water that were land marks and allowed for stopovers during people's movements:

> The more important water supplies usually have some totemic significance and play a very important part in aboriginal ceremonial and social life, also fixing routes and trading centres (Johnston 1941).

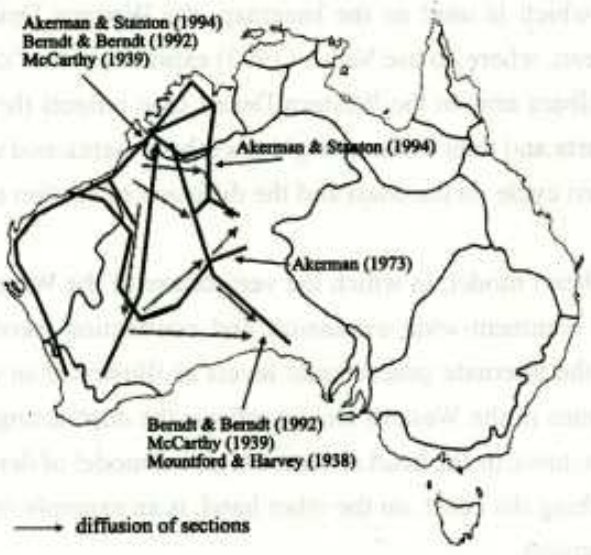
In the case of Dreaming tracks, however, it is not the lack of geographically located data that constitutes the problem, but, quite the opposite, the phenomenal number of such tracks that criss-cross the most remote areas of the desert and beyond. The richness of Dreaming tracks and myths renders the task difficult. The Dreaming is a means of signifying, naming and breaking up the spatial continuum into recognisable points of reference and routes, and it is therefore not surprising that the assumed overlap of trading-routes with Aboriginal cartography is tautological.

Despite this complexity, I have chosen to represent some of the better-known and far-reaching Dreaming routes as a means of illustrating the more than probable congruency between religious exchanges and material trading. Among these is the well-known Tingarri cycle that criss-crosses extensive parts of the northern part of the Western Desert, which I mentioned earlier in relation to Petri's report on how Yulparitja people brought the Tingarri cycle to the Nyangumarta in the Pilbara. The Tingarri cycle is an extensive network of tracks itself. For the northern part of the Western Desert, Graham (2002) summarises some of the references available for these routes:

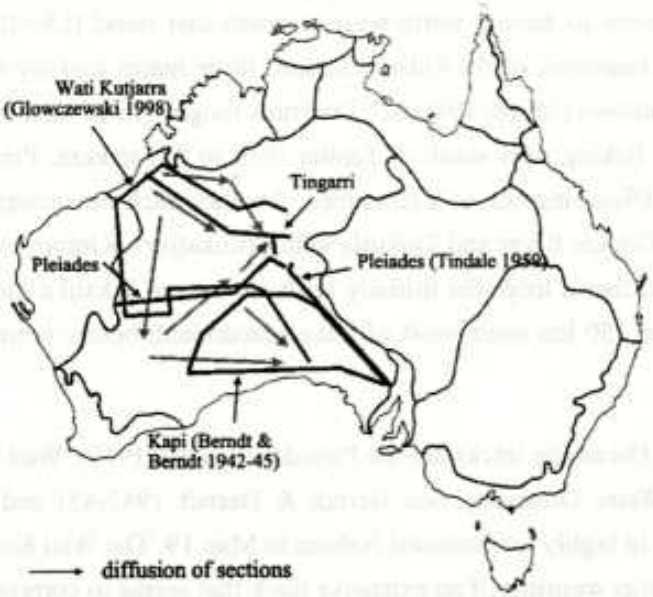
> In overview, we can identify three great trails of travelling Tingari ancestors that lead inland from the coast and culminate in a network of tracks that traverse

> the Great Sandy and Gibson Deserts (Kimber 2000). Viewed from a distance, the journeys seem to have a north-west to south-east trend (Chailleu 1999:7). In the Tingari heartland of the Gibson Desert, three major journey-lines can be discerned, as follows (Myers 1986:62). One runs roughly from west to east below Lake Mackay, linking sites south of Jupiter Well to Kiwirrkura, Pinari, and the famous Water Dreaming site of Kalimpinpa. Another track runs roughly south to north, linking Docker River and Tjukurla with Mitukatjirri, Kintore, and Pinari. A third track describes a loop that initially leads west from Tikatika (near Kintore) to a point some 150 km south-west of Lake Macdonald, before returning to end at that lake.

Other extensive Dreaming tracks are the Pleiades (Tindale 1959), Wati Marlu (Kangaroo Dreaming), Kapi (Water Dreaming; see Berndt & Berndt 1942-45) and others, some of which I have shown in highly schematised fashion in Map 19. The Wati Kutjarra (Two Men) Dreaming is yet another example of an extensive track that seems to correlate with routes for cultural diffusion (Glowczewski 1998). Tindale (1936) illustrates how the Two Men travelled from the area of Laverton eastwards and north-eastwards to Warburton and beyond, while Berndt (1941:7) mentions that his records "extend the legend further south and south-east to Ooldea and into the Kokata tribal country". Both Tindale's and Berndt's depictions of the route of the Wati Kutjarra overlap with the proposed southwest-northeast diffusion of sections from Kalgoorlie/Laverton to Warburton, and beyond in Tindale's case, and the diffusion from Warburton to Ooldea in Berndt's case (see Map 19). Berndt (1941:8), moreover, reports how he was told at Ooldea that the Wati Kutjarra arrived from the distant north-west, "where the pearl-shell comes from", and that "many articles of trade have and still do come down the ancestral tracks, which were probably migratory".



Map 18: Schematised trade routes and diffusion of sections (basemap is from Peterson [1976], proposed culture-areas based on drainage divisions)



Map 19: Schematised Dreaming tracks and diffusion of sections (basemap is from Peterson [1976], proposed culture-areas based on drainage divisions)[50]

Maps 18 and 19 are highly schematised illustrations of the various trading-routes and Dreaming tracks mentioned in the literature, superimposed on some of the diffusion routes of sections I have proposed earlier (see Maps 11, 12 and 13). While such generalisations always involve local factual errors and problems, they nevertheless accord well with the general pictures proposed by others, such as Peterson's (1976) culture-areas or Sutton's (1990) "pulsating heart" model. In Peterson's distribution of global culture areas in accordance with drainage basins, which is used as the basemap, the Western Desert extends into the Pilbara towards the Ocean, where, to use Veth's (1993) expression, the "desert meets the sea". The inclusion of the Pilbara area in the Western Desert bloc reflects the cultural connection between the Nyangumarta and their eastern neighbours that I mentioned earlier with regard to the arrival of the Tingarri cycle on the coast and the diffusion of section names into the desert from this area.

Sutton's pulsating heart model, in which the very centre of the Western Desert functions as the centre-point of continent-wide expansion and contraction movements, reflects the distribution pattern of the alternate generational levels as illustrated in chapter VII; and the diffusion of section names in the Western Desert reflects the contracting movements, within Peterson's culture-areas, towards the heart of Sutton's global model of demographic pressures. The Tingarri cycle reaching the coast, on the other hand, is an example of similar movements during a period of expansion.

[50] Glowczewski's (1998) map representing the Wati Kutjarra track is much more detailed than reproduced here. A schematised representation of this track has been chosen here to level out with the schematised routes of diffusion of sections.

The trade and Dreaming routes so far mentioned, and the actual tracks employed by people during nomadism and migrations, of which Johnston's (1941) paper reports a significant number for the south-eastern part of the Western Desert, unsurprisingly overlap, and we can now summarise these within simple geographic patterns. The network connections below reflect movements of goods and people, Dreaming tracks, and the diffusion of sections.[51]

1. From Ooldea
   a. to the Warburton/Rawlinson Ranges, then routes 2 and 4;
   b. another route goes along the northern edge of the Nullarbor westwards, joining the end of route 4a.
2. From the Rawlinson Ranges
   a. to Kintore (Yumari area) northwards, into the area of Balgo and then northwards into the Kimberleys;
   b. another route goes from the Rawlinson Ranges eastwards to the Musgrave Ranges, and then back south towards Ooldea.
3. From the Rawlinson Ranges to the Warburton Ranges westwards. On the way, from Lake Christopher northwards to the area of Jupiter Well and the Canning Stock Route,
   a. then north-eastwards to the area of Balgo and joining route 2a,
   b. and from Jupiter Well westwards to Lake Disappointment and to the Pilbara coast.
4. From the Warburton Ranges westwards and south-westwards to the area of Laverton.
   a. from Laverton south-westwards, joining route 1b.
   b. from Laverton north and north-westwards as far as Lake Disappointment (Jigalong area). From there, north-westwards to the Pilbara and coast.
5. From the Pilbara, northwards into the Kimberleys.

These general routes should not be understood as the only ways through which people, goods and ideas moved through the Western Desert, but they reflect the most important and significant ones. The Western Desert resembles a spider web of connections and routes, and the elements mentioned above constitute only its skeleton.

[51] I have chosen a south-east to north-west direction in the list of routes below. Obviously, these routes function in both ways, and could identically start in the Pilbara/Kimberley area and progress south-eastwards to the Nullarbor.

IX. Conclusion

The nature of the notions and tools developed and used in this study, such as *valeur of a section* or *lines of regression*, are unable to provide us with an understanding of actual local scenes in which human interaction is or was embedded. The study has, therefore, to be taken for what it is: not a sociological study of human behaviour or social structure, not the analysis of Aboriginal identity, not the recollection of actual historical events, but an experiment in ways and modes of asking questions and in proposing, even if partial, answers to particular, but nevertheless important, historically testified series of events. It does not provide the reader with an insight into everyday interaction and meaning, but it opens doorways to understanding Western Desert culture and people as inherently dynamic, curious, open to things from abroad.

The principal questions addressed in this study have been directed to uncovering a logic of diffusion and substitution of section names from the Pilbara-Kimberley areas into the Western Desert, and to interpreting this logic as a succession of logical and historical events. We have seen that the principle of section combinations adapts itself well to situations in which different terminological systems meet, and that adjustments and transformations are in some cases necessary and inevitable if the structural integrity of these systems is to be maintained over time and space. Moreover, we have seen that some section names, such as Tjarurru and Yiparrka, seem to have diffused into and over the Western Desert from the South-West, the area where McConvell (1996) estimates the *western section system* to have originated.

We have also seen that there is a certain logic in the rules of substitution, such that, for example, if two sections in a given region may substitute for each other, they characterise a relational identity and are not ruled by filiation or marriage. Yet we have also seen that the valeur of a section may vary along routes of diffusion. Comparing two sections whose originally identical valeur has been transformed following two routes becomes very difficult. Recall the example of Paljeri which, on the one hand, has a valeur of diffusion Milangka and Tjarurru, but is replaced by Burgulu following another route. The logic is such that the two valeurs of Paljeri that meet again are treated as different, as not having the same logic any more. The valeur has "lost memory" of its earlier combinations with other names.

I now return briefly to Brandenstein's thesis, according to which the names of sections translate psychological states and inherited humours, a thesis that is, in some respects, similar to the processes of section attribution I have termed "arbitrary", where people are given section names in accordance with physical characteristics. If the meanings of section names are effectively humours transmitted from generation to generation, although we have seen how actors juggle those names and transform and change their structural position, one must conclude that either the "genetic laws" to which Brandenstein makes reference are different from region to region, or, simply, and others have argued similarly,[52] that the theory of Brandenstein has only a very local foundation.

[52] See the strong critique made by McConvell (1985b).

If I believe that the principles formulated in Chapter I have been followed, and that they have proved themselves in some respects to be efficient, the same may not be said for the accuracy of the principles themselves. It is not self-evident that the diffusion of section names accompanying the diffusion of the system itself has, effectively, followed a particular logic. It is possible that the adoption of terms and their historical replacement by others followed a principle different from the one concerned with the internal and global coherence both of and between the systems. However, if one accepts that the terminologies travelled at the same time as, and in common with, the systems themselves, a completely incoherent diffusion seems relatively improbable, because it supposes that groups would have juggled with the terminology before adopting the system. If there were uncertainty and arbitrary attribution of sections in early stages of the system's arrival at a particular group, the present situation shows that, eventually, these uncertainties were answered and the system evened out.

Another problem is related to the temporal disparity of the used sources. There are some 80 years or more between Mathews, Bates, Christensen and my own, and it is both possible and probable that systems changed and moved further on, replacing other terms and structural positions, as families and groups migrated, especially since contact with settlers. The time-span in which diffusion has taken place is another question mark. Mathews' informants indicated section systems that had progressed well eastwards in the south-western portion of the desert, and Bates's reports show that the system was well in place in the Wiluna-Kalgoorlie area at the beginning of the 20th century. We also know that the Ngaatjatjarra, for example, received the terms they use today in the thirties. Although unlikely, it is possible that those terms replaced another set of terms previously present in this area. The only rather definite time-frame we might propose is that, from about the Wiluna-Leonora area, the terminology took less than 40 years to progress towards the West Australia-Northern Territory border. This rapid diffusion was most probably linked to the strong networks that local groups in the Western Desert maintained among themselves, with frequent ceremonial exchanges and intermarriages, and was considerably reinforced by migration and settlement from the 1930s onwards. Grading of tracks through the desert, especially since the late 1950s following the Weapons Research Establishment's missile tests (Dousset 2002b), is yet another accelerating factor.

The section system seems to have followed two major routes of diffusion into the Western Desert. One route began in the Pilbara where the section names, Karimarra, Panaka, Paljeri and Purungu were used, and, south of it, Milangka. The other route was from the South-West, which was the possible origin or place of entry of Tjarurru and Yiparrka into the Western Desert. The South-West is also the possible origin of the *western section system* (McConvell 1990, 1996), a system that obviously moved northwards at first, and then north-eastwards into the desert at a later stage.

The *north-western or Pilbara-Kimberley system* followed two valeurs, one parallel to the coast southwards along the desert, the other south-east to the Yulbaridya and the Pintupi. The *south-western system* (Karti area) went straight into the desert in common with elements of the *north-western system*. Before penetrating the Western Desert itself, the north-western or Kimberley-Pilbara terms moved along the coast to a point in the south where they encountered

new terms or another system. As if this had enforced the system's diffusional capacity, given it new strength, probably because of migratory movements and cultural affinities, the section system moved into the desert, creating assimilatory identities that seem to slow down the diffusion of the system.

Cultural diffusion with the section systems as an object has been linked to the existence of wider exchange systems, of which the constituents are threefold: trade routes, Dreaming tracks and migrational patterns. Not surprisingly, these constituents overlap in creating wide networks. While this exchange system criss-crosses and covers all areas of the Western Desert, some branches have been determined as dominant, as being the major arteries for the flow of goods and ideas, if not people. These branches lead to important entry-points at the desert's edges, which are, clockwise, the region south-west of Kalgoorlie, Anna Plains and surroundings in the Pilbara, the area of Balgo south of the Kimberleys, the Rawlinson-Musgrave axis in the east and Ooldea in the south-east. An additional doorway with a Kintore-Papunya axis must have operated from the 1930s onwards, at least, following Pintupi people's eastwards drift and the adoption of subsections. Interestingly, these doorways are situated along some of the limits determined by Peterson's drainage basin model.

Within the Western Desert, the principal arteries are the Musgrave-Rawlinson-Warburton-Kalgoorlie east-west axis and the Ooldea-Warburton/Rawlinson-Anna Plains/Balgo north-south axis. Among these, the Warburton–Rawlinson area forms a junction in the exchange system. This area also overlaps with the centre-point of the uniform distribution of the alternate generational terminology and can well be interpreted through Sutton's metaphor of the pulsating heart, from which, along the main axes, people and ideas move outwards and inwards on a periodic and rhythmic basis. Here it becomes difficult to follow McConvell's clear-cut distinctions between language expansion—people actually moving along with language—and cultural diffusion—the exchange of ideas and goods. It seems that, in some cases, these are identical processes within the Western Desert, and that in other cases the distinction is made difficult because of the cultural similarity of the various groups.

Today's tracks, routes and communities are situated along the major branches of the exchange system. This is far less surprising than it may appear at first sight. The example of the Warburton mission nicely illustrates this, as members of the United Aborigines Mission decided to establish a mission in the Warburton Ranges where they had observed large congregations of Aboriginal people. Similarly, many patrol routes, which later became tracks and roads, were explored in the company of Indigenous guides who knew the country and water holes, and obviously followed well-established exchange routes.

The picture depicted in this work has implications for our understanding of the "Western Desert cultural bloc". What was a debatable concept when Berndt proposed it, and since then has been taken for granted by Western Desert specialists, has now obtained additional and non-negotiable evidence: the cultural bloc is a dynamic ensemble of groups with local identities situated within a larger entity, which is not solely an anthropological artefact, but is also ethnographically experienced and historically grounded. Western Desert culture

emerges from the dialectic between local identity and global similarity or embeddedness, a dialectic that simultaneously promotes vast networks and exchange systems and facilitates the incorporation of goods and ideas travelling along these systems into local social structures and cultures. From this point of view, the limits of the Western Desert cultural bloc are not defined endemically, not from within, but from without by people or groups who refuse to engage in the exchange systems and who reject a people and language that easily integrates itself within foreign systems. The desert's expansionist and inclusivist ethos is the major social engine at work in the section systems' easy and rapid diffusion throughout the Western Desert.

Appendix

a) Statistical tools used

Affine adjustment of a bi-varied protocol with calculation of the linear regression and the coefficient of correlation.

Linear regression of y into x:

$$Y = a.X + b \Rightarrow$$

$$a = \frac{(X - mx)(Y - my)}{\|X - mx\|^2} = \frac{Covariance(X,Y)}{Variance(X)}$$

$$b = my - a \cdot mx$$

Quality of the adjustment

$$r(X,Y) = \cos(X - mx, Y - my)$$
$$= \frac{Cov(X,Y)}{\sqrt{Var(X)} \cdot \sqrt{Var(Y)}}$$

$r(X,Y) = \pm 1$ *perfect adjustment*
$r(X,Y) = 0$ *bad adjustment*

The general coefficients of correlation are as follows:

Karimarra	0.09	bad (generalised category)
Purungu	0.32	bad (generalised category)
Panaka	0.44	bad (generalised category)
Paljeri	- 0.66	average (generalised category but to a lesser degree than previous cats.)
Burgulu	- 0.71	relatively good (dislocated category)
Tjarurru	0.03	bad (localised category)
Milangka	0.88	relatively good (localised category)
Yiparrka	0.02	bad (localised category)

b) Stories explaining the arrival of sections in the Rawlinson Ranges and Warburton Ranges

The following Ngaanyatjarra story depicts the origin of sections in the Warburton-Rawlinson area. The stick insect is *Wati Kawalpa*. The text below is reproduced from Glass & Hackett (1970) but does not contain the transcript and the Ngaanyatjarra text itself, which are in the original.

A TRADITIONAL STORY OF THE STICK INSECT

by Thomas Murray

(recorded by Glass & Hackett)

There was a man and his wife. They lived there and the rain pelted down and pelted down and stopped. And leaving his wife, the man followed a kangaroo around and around. And following it around, he was not killing it. And the kangaroo was slowing down and sitting around. And the man was working sorcery on the kangaroo, and making it alive as he was following it. And it was getting up. And he came, followed and saw it had fallen down. He came. and while it was lying there he came to kill it, but worked sorcery on it, revived it, and followed it again. He followed it and it again fell. Again when it had lain down, he worked sorcery on it and revived it. And the kangaroo revived, and getting up went on. He followed it there in the northern country. He followed the unsuspecting animal, worked sorcery on it, revived it and followed it for a long, long way. He followed it far, then having killed it, cooked it and lay down. Next day he got up and was coming along slowly. He came to his wife but saw only the shelter there. He came and saw these many tracks all around. These ones sat here, called her, lay down and getting up went this way. And standing there with meat on his head, he thought, "What shall I do about this!" Having stood and thought, he left it. He went around, having put the meat down, behold he left it. He stood there, thought and thought and said, "I will follow". He followed and saw that these had gone a long way. He climbed up and standing there he listened. He came and listened from the mulga tree. He left this and came and listened at the big corkwood tree. Standing there he listened and listened. The cold wind was taking them. And they were blowing in his direction. He kept listening. And the cold wind brought all the Southerners from the south. It brought them all and put them in the water-hole *Pita-pita*; a big salty water-hole in the ground. And there he beheld them all go in and his wife went in last. And he, shouting his complaint, ran around and sat down there. He told two children, one left-handed and the other right-handed, to stay there. And having left them, he went for a large amount of grass. He went for the spiny leaves of a tree he had seen a long distance away. He came a long way, got it having pulled it up, and came along. He pulled some up, then looked in vain (for more); this was only a little bit. And he put it down and left it. He came along, passed on, and saw a large amount. And pulling it up he there-upon put it on his head, and having got it came along. He emerged and saw the same two children

were still guarding (the hole). He came and having put it down, lit it and hitting, forced the smoke down inside. And smoke arose from every direction. And he was covering the opening of the hole with his hand where the smoke was coming out. He caused the smoke to go in and left it. He came along and was digging the place called *Tjunan.* He dug, and hitting them all, he was putting the Northerners down. He was putting the Southerners down. He was putting many and calling them the *panaka* social group. He was putting others in a camp near-by and calling them the *tjaruru* social group. He was putting others and calling them the *milangka* social group. There close by he put his wife alive. He sucked his (wife) (to revive her), put her down and she was sitting there having become alive. And the owl came and sucked her and she died. And (the stick insect) left her and was lying there feeling about for his stick for testing a burrow. And the turkey came and saw him lying there feeling about; only his hand was moving. But (the turkey) saw this and leaving went quickly away. And the (stick insect's) wife died.

Tindale (1963a:53) reports another story for the arrival of the section system in the Rawlinson Ranges:

> Njingga [Nyirnnga] (cold or ice) beings came south-west from Mt Connor and divided into two groups, one went south , the other made their way west along Lake Amadeus and Hopkins Lake to the Rawlinson Ranges. The Njinnga men brought with them the four class terms. They found the people in the Petermanns and in the Ngadadjara country were marrying even sisters, Karimara men marrying Karimara women. They arranged that I:paruka [Yiparrka] men should marry Tjaroro [Tjarurru] women and that the children should be Milangka and that there should be Purungu people. The eastern half of the people carried with them Taroro, Purungu, Panaka and Karimara which they took south to Bell Rock = Karrburarapiti. The people to the south did not have a class system.

Interestingly, according to this story, the Rawlinson people already had sections—as it is claimed that Karimara were marrying Karimara people—but they had not arranged these properly. Alternatively, it might well be that these were in fact generational moieties in which, from a sociological point of view, generational "brothers" and "sisters" were, indeed, inter-marrying.

c) Corpus

Group/tribe, region[53]	Ego, B, Z, FF, MM, etc.	H, W, MBD, MBS, FZD, FZS, etc.	M, MB, WF, HF, etc.	F, FZ, WM, HM, etc.	Source
Djaberadjabera	Banaga	Burungu	Garimba	Badyari - Paldjeri	Elkin 1933 (Djabera-Djabera)
Djugun Broome	Kaimera	Boorong	Paljeri	Banaka	Bates (1985:207) for Broome; Tindale 1974 (Djugun); Elkin 1933 (Djukan)
Iliaura Alyawarra Central Desert	Kimarra	Pijarra	Kngwarriya	Pula	Tindale (1965); Yallop (1969)
Jawuru Pilbara / South-Kimberley	Banaga	Burungu	Garimba	Badyari - Paldjeri	Elkin 1933 (Yauor)
Kalamaia Mt. Jackson Southern Cross Goldfields	Kaimera	Bourong	Tharrourou	Ibarrga	Bates 1925
Karadjeri Pilbara	Panaka	Burong	Karimba	Paljeri	McKelson 1980:215 ; Elkin 1933; McConvell 1985a
Kariera Pilbara	Panaka	Purung	Karimarra	Palyarri	Brandenstein 1982:12; Radcliffe-Brown 1913
Kartudjara Great Sandy Desert Western Desert	Karimara	Panaka	Milangga	Purungo	Tindale 1965
Koara Western Desert	Kaimera	Boorong	Boorgooloo	Tharrooroo	Bates 1985:105 (Mt. Margaret, Sandstone - Lennonville); Tindale 1974 (Koara, Guwara or Kuwarra)

[53] Alternative spellings and names used for these groups in the literature can be found on this website: http://www.ausanthrop.net/resources/ausanthrop_db/

Koara Western Desert	Purukulu	Kaimara	Purungu	Taroro	Tindale 1965 (recorded 1939)
Koara Western Desert	Karimara	Purungu	Tjaruru	Yiparka	Liberman 1977
Mandjildjara Great Sandy Western Desert	Milangga	Purungu	Banaka	Taroro (Karimara)	Tindale 1965
Mandjindja Western Desert	Tararu	Ibarga	Milanga	Burunga	Elkin 1938-40:317; Elkin 1931:68
Mangala Pilbara	Banaga	Garimara	Burungu	Badyari	McKelson 1980:217
Mardu Jigalong Western Desert	Banaga	Garimara	Burungu	Milanga	Tonkinson 1991 (Jigalong)
Nangatadjara Western Desert	Milangka	Banaka	Karimara / Taroro	Iparuka	Tindale 1965 (recorded at Mt. Margaret, 1939)
Ngaanyatjarra 1 Western Desert	Panaka	Tjarurru	Purungu	Karimarra	Douglas 1964
Ngaanyatjarra 2 Western Desert	Yiparrka	Tjarurru	Purungu	Milangka	Douglas 1964
Ngaatjatjarra 1 Western Desert	Panaka	Tjarurru	Purungu	Karimarra	Dousset (1999a, 1999b)
Ngaatjatjarra 2 Western Desert	Yiparrka	Tjarurru	Purungu	Milangka	
Ngaiawongga Western Desert	Kaimera	Burgulu	Paljari	Burungu	Bates 1985:203 (Meekatharra District - Murchison District); Tindale 1974 (Ngaiawongga)
Ngaluma Ngarluma Pilbara	Panaka	Purung	Karimarra	Paljarri	Brandenstein 1970; McConvell 1985a.
Ngarlawongga Western Desert	Boorong	Paljeri	Kaimera	Boorgooloo	Bates 1985: 102 (Upper Murchison District); Tindale 1974 (Ngarlawonga)
Ngombal Kimberley	Banaga	Burungu	Garimba	Badyari - Paldjeri	Elkin 1933 (Ngormbal)

Ngurlu Menzies to Mt. Leonora Western Desert	Milangga	Purukulu	Purungu	Karimarra	Tindale 1965. Related to Koara. Tindale writes that Purukulu replaces Panaka of Waljen tribe.
Njangamarda Iparuka (inland) Pilbara	Panaka	Karimarra	Purungu	Milangka	O'Grady & Mooney 1973
Njangamarda Kundal (costal) Pilbara	Panaka	Purungu	Karimarra	Milangka	McKelson 1980:217; O'Grady & Mooney 1973; McConvell 1985a: 30
Njikena Kimberley	Kaiamba	Parajerree	Parungo	Panaka	Bates 1985: 90 (Fitzroy River District); Tindale 1974
Njulnjul Njul Njul Kimberley	Panaka	Burong	Karimba	Paljeri	Bates 1985:90 (Derby, Beagle Bay, MacDonald Ranges) terms are Kaiamba, Parrajer, Banaka, Poorungo; Tindale 1974; McConvell 1985a
Ooldea 1	Banaga	Daruru	Garimara	Burong	Berndt 1992:48
Ooldea 2	Ibaga	Daruru	Burong	Milang	Berndt 1992:48
Pini Mt. Margaret Western Desert	Tjaroro	Panaka	Karimara	Purungu	Tindale 1965 (at Mt Margaret, 1939)
Pintupi Western Desert	Taroro	Panaka / Iparuka	Purukulu	Purungu	Tindale 1965.
Punaba Bunaba Kimberley	Karimpa	Palyeri	Panaka	Purung	McConvell 1985a
Tjalkadjara North of Laverton Western Desert	Ibaruka	Karimara (Taroro)	Milangu	Panaka	Tindale 1965

Waljen Laverton Mt. Margaret Mission Western Desert	Tararu	Panaka	Karimara	Burunga	Elkin 1938-40317 (Laverton, Mt. Margaret, Kalgoorlie District) ; Elkin 1931:68
Waljen Leonora SW of Menzies Western Desert	Purungu	Karimara	Milangga	Panaka	Tindale 1965
Yulparitja Yulbaridya (Nangatara) Western Desert	Banaga	Garimara	Burungu	Burgula	McKelson 1980:217; Tindale 1974 (Nangatara)
Yulparitja Yulbaridya (Nangatara) Western Desert	Paritjari (Parutjari)	Karimba	Purungu (Karimara)	Panaka (Purukulu)	Tindale 1965

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